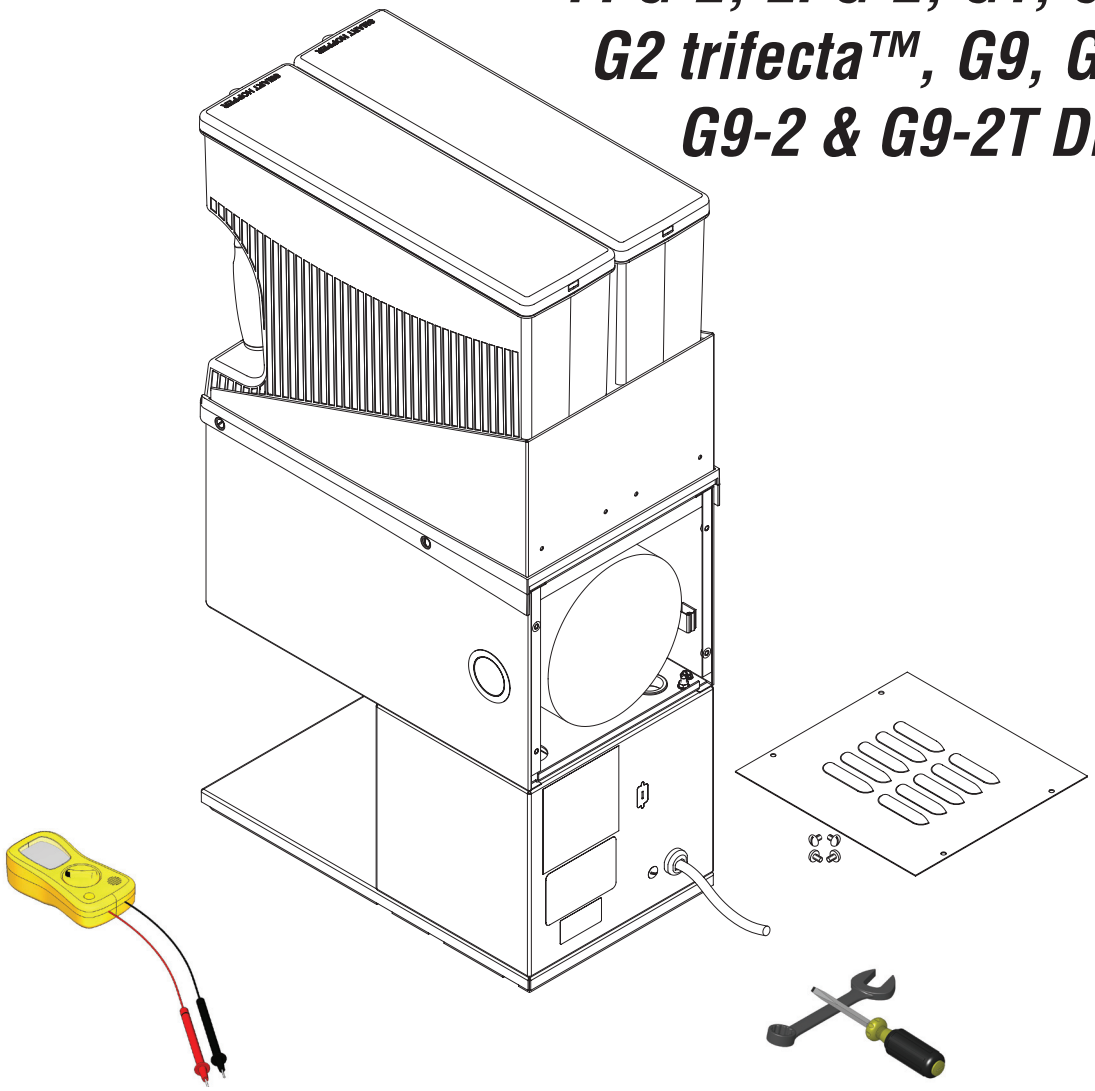
BUNN®

GRINDERS

Includes: MHG, FPG, FPG-2, LPG-2, G1, G2, G3, G2 trifecta™, G9, G9WD, G9-2 & G9-2T DBC



SERVICE & REPAIR MANUAL

BUNN-O-MATIC CORPORATION

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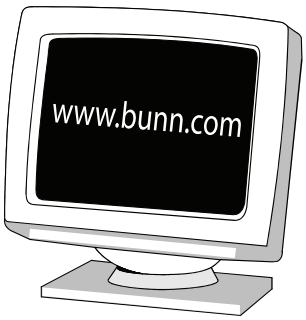

To ensure you have the latest revision of the Operating Manual, or to view the Illustrated Parts Catalog, Programming Manual, or Service Manual, please visit the Bunn-O-Matic website, at www.bunn.com. This is absolutely FREE, and the quickest way to obtain the latest catalog and manual updates. For Technical Service, contact Bunn-O-Matic Corporation at 1-800-286-6070.

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BUNN-O-MATIC COMMERCIAL PRODUCT WARRANTY

Bunn-O-Matic Corp. ("BUNN") warrants equipment manufactured by it as follows:

1) Airpots, thermal carafes, decanters, GPR servers, iced tea/coffee dispensers, MCP/MCA pod brewers thermal servers and Thermofresh servers (mechanical and digital)- 1 year parts and 1 year labor.

2) All other equipment - 2 years parts and 1 year labor plus added warranties as specified below:

   a) Electronic circuit and/or control boards - parts and labor for 3 years.

   b) Compressors on refrigeration equipment - 5 years parts and 1 year labor.

   c) Grinding burrs on coffee grinding equipment to grind coffee to meet original factory screen sieve analysis - parts and labor for 4 years or 40,000 pounds of coffee, whichever comes first.

These warranty periods run from the date of installation BUNN warrants that the equipment manufactured by it will be commercially free of defects in material and workmanship existing at the time of manufacture and appearing within the applicable warranty period. This warranty does not apply to any equipment, component or part that was not manufactured by BUNN or that, in BUNN's judgment, has been affected by misuse, neglect, alteration, improper installation or operation, improper maintenance or repair, non periodic cleaning and descaling, equipment failures related to poor water quality, damage or casualty. In addition, the warranty does not apply to replacement of items subject to normal use including but not limited to user replaceable parts such as seals and gaskets. This warranty is conditioned on the Buyer 1) giving BUNN prompt notice of any claim to be made under this warranty by telephone at (217) 529-6601 or by writing to Post Office Box 3227, Springfield, Illinois 62708-3227; 2) if requested by BUNN, shipping the defective equipment prepaid to an authorized BUNN service location; and 3) receiving prior authorization from BUNN that the defective equipment is under warranty.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY OTHER WARRANTY, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF EITHER MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The agents, dealers or employees of BUNN are not authorized to make modifications to this warranty or to make additional warranties that are binding on BUNN. Accordingly, statements by such individuals, whether oral or written, do not constitute warranties and should not be relied upon.

If BUNN determines in its sole discretion that the equipment does not conform to the warranty, BUNN, at its exclusive option while the equipment is under warranty, shall either 1) provide at no charge replacement parts and/or labor (during the applicable parts and labor warranty periods specified above) to repair the defective components, provided that this repair is done by a BUNN Authorized Service Representative; or 2) shall replace the equipment or refund the purchase price for the equipment.

THE BUYER'S REMEDY AGAINST BUNN FOR THE BREACH OF ANY OBLIGATION ARISING OUT OF THE SALE OF THIS EQUIPMENT, WHETHER DERIVED FROM WARRANTY OR OTHERWISE, SHALL BE LIMITED, AT BUNN'S SOLE OPTION AS SPECIFIED HEREIN, TO REPAIR, REPLACEMENT OR REFUND.

In no event shall BUNN be liable for any other damage or loss, including, but not limited to, lost profits, lost sales, loss of use of equipment, claims of Buyer's customers, cost of capital, cost of down time, cost of substitute equipment, facilities or services, or any other special, incidental or consequential damages.

392, AutoPOD, AXIOM, BrewLOGIC, BrewMETER, Brew Better Not Bitter, BrewWISE, BrewWIZARD, BUNN Espress, BUNN Family Gourmet, BUNN Gourmet, BUNN Pour-O-Matic, BUNN, BUNN with the stylized red line, BUNNlink, Bunn-OMatic, Bunn-O-Matic, BUNNserve, BUNNSERVE with the stylized wrench design, Cool Froth, DBC, Dr. Brew stylized Dr. design, Dual, Easy Pour, EasyClear, EasyGard, FlavorGard, Gourmet Ice, Gourmet Juice, High Intensity, iMIX, Infusion Series, Intellisteam, My Café, Phase Brew, PowerLogic, Quality Beverage Equipment Worldwide, Respect Earth, Respect Earth with the stylized leaf and coffee cherry design, Safety-Fresh, savemycoffee.com, Scale-Pro, Silver Series, Single, Smart Funnel, Smart Hopper, SmartWAVE, Soft Heat, SplashGard, The Mark of Quality in Beverage Equipment Worldwide, ThermoFresh, Titan, trifecta, Velocity Brew, A Partner You Can Count On, Air Brew, Air Infusion, Beverage Bar Creator, Beverage Profit Calculator, Brew better, not bitter., BUNNSource, Coffee At Its Best, Cyclonic Heating System, Daypart, Digital Brewer Control, Nothing Brews Like a BUNN, Pouring Profits, Signature Series, Tea At Its Best, The Horizontal Red Line, Ultra are either trademarks or registered trademarks of Bunn-O-Matic Corporation.

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INTRODUCTION

The Grinder will store various amounts of whole bean coffee and grind it to a preset grind and amount into an awaiting funnel and filter or French Press from most commercial drip coffee brewers. The equipment is only for indoor use on a sturdy counter or shelf. Adequate space must be available above the grinder to raise the lid when adding beans. Use only with whole bean coffee.

The grind is preset at the factory to drip specifications as set forth by the United States Department of Commerce and adopted by the Coffee Brewing Center of the Pan American Coffee Bureau. Adjustments may be made to alter both the amount and grind from the factory setting. Refer to the Installation & Operating Manuals for *ADJUSTMENTS*.

RECOMMENDED DAILY CLEANING

The use of a damp cloth rinsed in any mild, nonabrasive, liquid detergent is recommended for cleaning all surfaces on Bunn-O-Matic equipment. Care should be taken not to scratch the hopper or windows with any abrasive material. Regular cleaning will keep your grinder looking new for years. Refer to the Installation & Operating Manuals for *CLEANING*.

CAPACITY CHART

FPG, LPG	Six pounds
FPG-2	Three pounds in each hopper
MHG	Five pounds in each hopper
G9	Nine pounds
G9-2, G9-2T DBC	Six pounds in each hopper
G9WD	Five pounds
G1	One pound
G2	Two pounds
G3	Three pounds
G2 trifecta	Two pounds

G9 WD - Packaging & Shim Removal

WARNING

MUST BE COMPLETED BY AUTHORIZED SERVICE PERSONNEL.
DO NOT PLUG IN !
SEE INSTRUCTIONS BELOW BEFORE USING !

Step 1 - Remove & discard tape holding funnel arm in place. (Figure 1)
Step 2 - Remove & discard two silicon tubes between funnel guide & housing. (Figure 2)
Step 3 - Remove four screws in front housing panel. (Figure 3)
Step 4 - Remove & discard shim under transducer. (Figure 4)
Step 5 - Replace housing panel and secure four screws. (Figure 3)

Figure 1

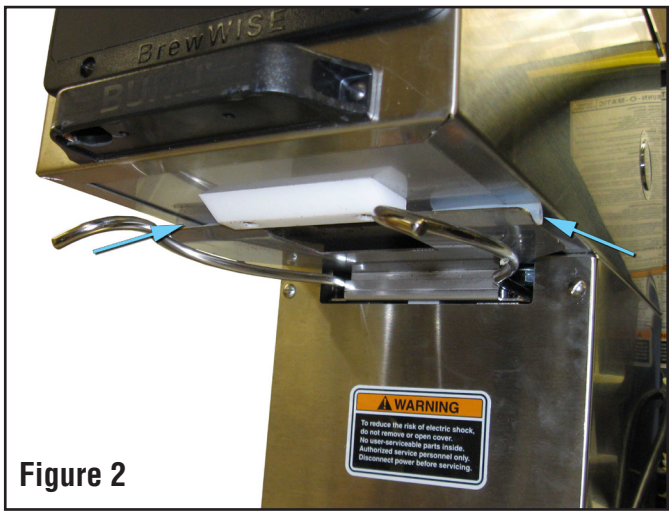


Figure 2

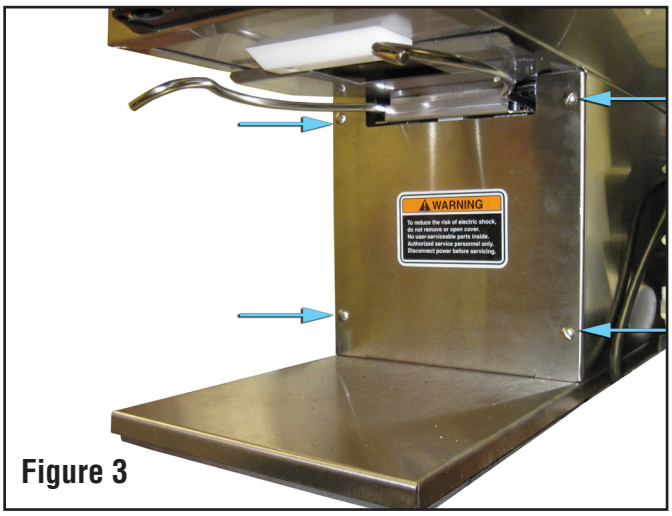


Figure 3

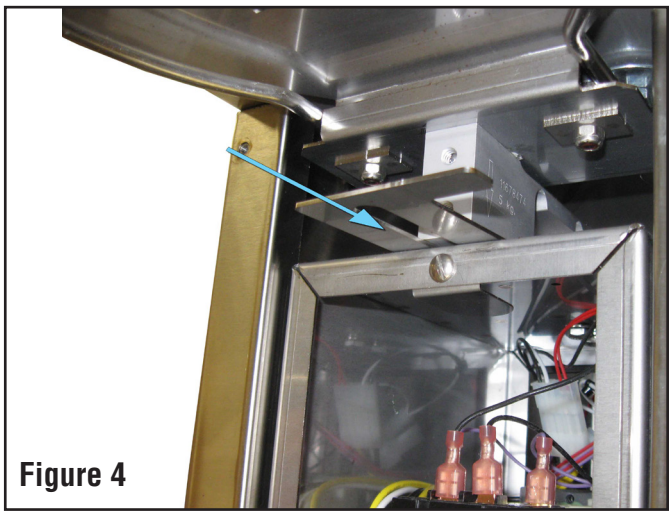
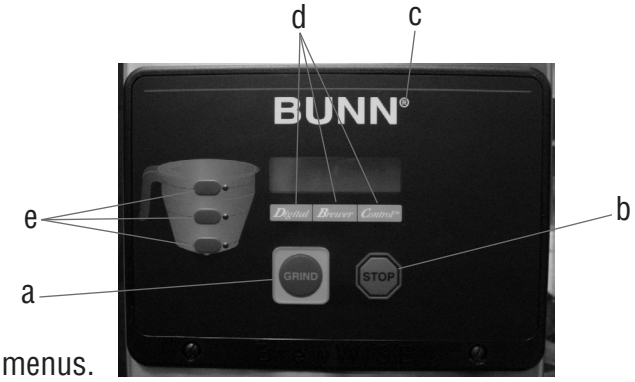


Figure 4

OPERATING CONTROLS

Model G9WD

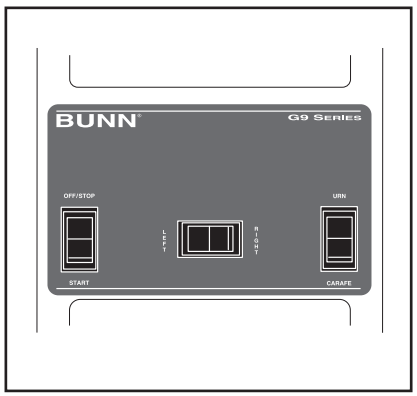


Grind Pad (a)
Pressing initiates a grind cycle.
Stop Pad (b)
Pressing ends the operation of the grinder.
® Pad (c)
Pressing the copyright pad allows programming access.
Pads (d)
"Hidden" buttons used to navigate setup and programming menus.
Pads (e)
Press button to select small, medium or large batch size.

Model G9-2

Off/On/Start Switch

OFF - (upper position) Switching to this position stops all operation of the grinder.
ON - (middle position) The switch will return to this position after a grind cycle has begun and will remain in this position after grinding has ceased.
START - (lower, momentary position) Pressing the switch initiates a timed grind cycle.



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Hopper Selector Switch

Left - Switching to this position allows beans to be dispensed from the left hopper.
Right - Switching to this position allows beans to be dispensed from the right hopper.

Batch Selector Switch (Optional)

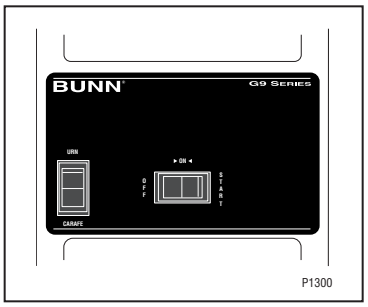
Urn - Switching to this position allows the correct amount of beans to be dispensed when grinding a large batch.
CARAFE - Switching to this position allows the correct amount of beans to be dispensed when grinding a small batch.

Dispense Timer

The dispense timer controls the amount of beans that will leave the hopper in a grind cycle. The timer can be adjusted to dispense a different amount from each hopper. The scale is from 0.4 to 150.0 seconds. Refer to the Installation & Operating Manuals for Adjustments.

OPERATING CONTROLS (Continued)

Model G9



Off/On/Start Switch

OFF - (left position)
Placing the switch in this position stops the operation of the grinder.

ON - (center, resting position)
The switch will return to this position after a grind cycle has begun and will remain in this position after grinding has ceased.

START - (right, momentary position)
Placing the switch in this position initiates a timed grind cycle.

Batch Selector Switch (Optional)

URN - Switching to this position allows the correct amount of beans to be dispensed when grinding a large batch.

CARAFE - Switching to this position allows the correct amount of beans to be dispensed when grinding a small batch.

Models G1, G2, G3 & G2 trifecta

Off/On/Start Switch

OFF - (upper position)
Switching to this position stops the operation of the grinder.

ON - (center, resting position)
The switch will return to this position after a grind cycle has begun and will remain in this position after grinding has ceased.

START - (lower, momentary position)
Pressing the switch initiates grinding only when a bag is in place behind the chute.

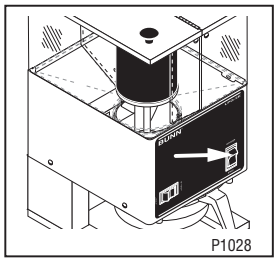
Grind Selector

Allows the user to vary the grind for each bag of coffee. Each setting will provide precisely the same grind every time it is selected.

Bag Sensor

Prevents the grinder from operating unless the back of a bag is in place behind the dispense chute.
Do not attempt to bypass this safety device.

Models LPG, LPG-2E

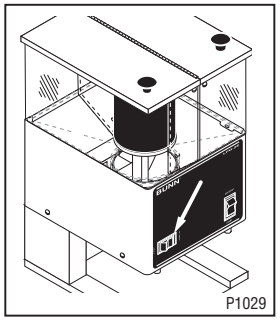


Off/On/Start Switch (Models LPG and LPG-2E)

OFF - (upper position) Switching to this position stops all operation of the grinder.

ON - (middle position) The switch will return to this position after a grind cycle has begun and will remain in this position after grinding has ceased.

START - (lower, momentary position) Pressing the switch to this position and releasing initiates a grind cycle.



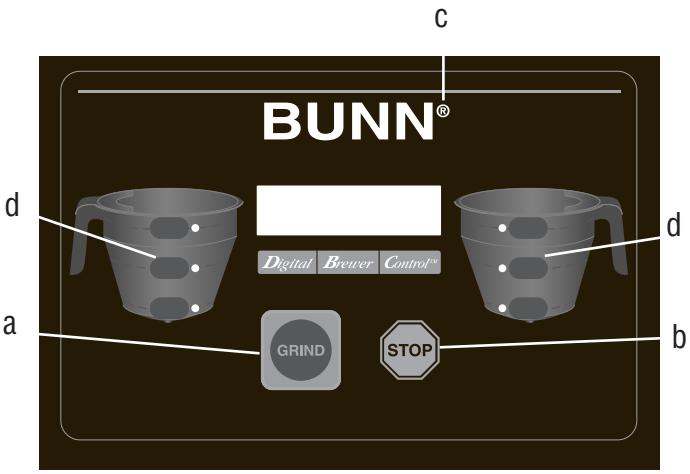
Hopper Selector Switch (Model LPG-2E only)

LEFT - Switching to this position allows beans to be ground from the left hopper.

RIGHT - Switching to this position allows beans to be ground from the right hopper.

OPERATING CONTROLS (Continued)

Model MHG

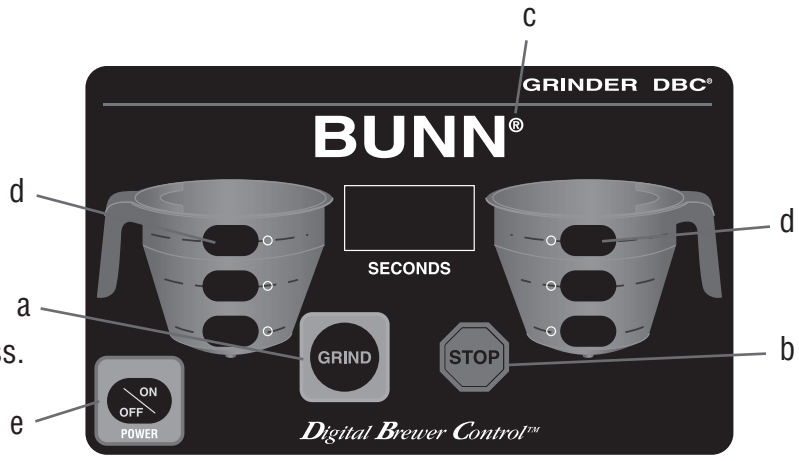


Grind Pad (a)
Pressing initiates a timed grind cycle.
Stop Pad (b)
Pressing ends the operation of the grinder.
® PAD (c)
Pressing the ® pad allows programming access.

Hopper/Batch Selector Pads (d)
These pads are located on the funnel depictions on each side of the grinder with a total of 6 pads. Selecting one of these pads will select the amount of grind and side from which to grind.
Example: Selecting the lower pad on the left side will grind enough beans from the left hopper of the grinder to brew the amount programmed into grinder.

Control Board
The control board determines the amount of beans that will leave the hopper in a grind cycle. The timer portion can be adjusted to dispense a different amount from each hopper and each batch size. The scale is from 0.4 to 99.9 seconds. Refer to the Installation & Operating Manuals for Adjustments.

Model G9-2T DBC



Grind Pad (a)
Pressing initiates a timed grind cycle.
Stop Pad (b)
Pressing ends the operation of the grinder.
® PAD (c)
Pressing the ® pad allows programming access.

Hopper/Batch Selector Pads (d)
These pads are located on the funnel depictions on each side of the grinder with a total of 6 pads. Selecting one of these pads will select the amount of grind and side from which to grind.
Example: Selecting the lower pad on the left side will grind enough beans from the left hopper of the grinder to brew the amount programmed into grinder.

Power ON/OFF Pad (e) (100V Models)
Pressing the ON/OFF pad alternately turns the grinder on and off.

Control Board
The control board determines the amount of beans that will leave the hopper in a grind cycle. The timer portion can be adjusted to dispense a different amount from each hopper and each batch size. The scale is from 0.4 to 99.9 seconds. Refer to the Installation & Operating Manuals for Adjustments.

OPERATING CONTROLS (Continued)

Model FPG

Off/On/Start Switch

OFF - (upper position) Switching to this position stops all operation of the grinder.

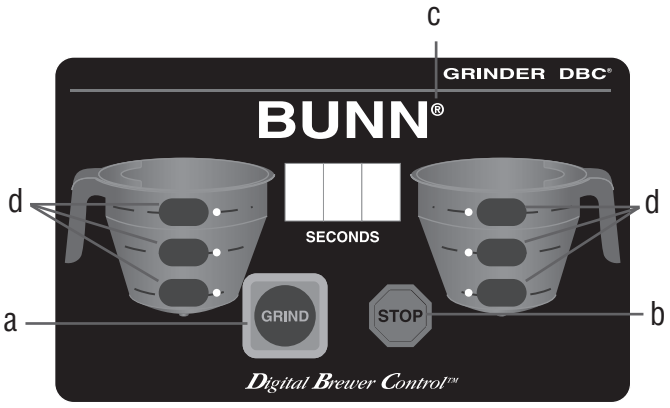
ON - (middle position) The switch will return to this position after a grind cycle has begun and will remain in this position after grinding has ceased.

START - (lower, momentary position) Pressing the switch to this position and releasing initiates a grind cycle.

Batch Selector Switch

Select Small, Medium or Large batch by turning the round selector knob on the left front of the grinder.

Model FPG-2 DBC



Grind Pad (a)

Pressing **GRIND** initiates a timed grind cycle.

Stop Pad (b)

Pressing **STOP** ends the operation of the grinder.

® PAD (c)

Pressing the ® pad allows programming access (see page 5).

Hopper/Batch Selector Pads (d)

These pads are located on the funnel depictions on each side of the grinder with a total of 6 pads. Selecting one of these pads will select the amount of grind and side from which to grind.

Example: Selecting the lower pad on the left side will grind enough beans from the left side of the grinder to brew the amount programmed into grinder.

Control Board

The control board determines the amount of beans that will leave the hopper in a grind cycle. The timer portion can be adjusted to dispense a different amount from each hopper and each batch size. The scale is from 0.4 to 99.9 seconds. Refer to the Installation & Operating Manuals for Adjustments.

TROUBLESHOOTING

A troubleshooting guide is provided to suggest probable causes and remedies for the most likely problems encountered. If the problem remains after exhausting the troubleshooting steps, contact the Bunn-O-Matic Technical Service Department.

- Inspection, testing, and repair of electrical equipment should be performed only by qualified service personnel.
- All electronic components have ac voltage and dc voltage potential on their terminals. Shorting of terminals or the application of external voltages may result in board failure.
- Intermittent operation of electronic circuit boards is unlikely. Board failure will normally be permanent. If an intermittent condition is encountered, the cause will likely be a switch contact or a loose connection at a terminal or crimp.
- Make certain that all electrical connections are tight and isolated.

WARNING

- Exercise extreme caution when servicing electrical equipment.
- Turn power OFF when servicing, except when electrical tests are specified.
- Follow recommended service procedures.
- Replace all protective shields or safety notices.

Problem	Probable Cause	Remedy
Grinder will not start.	1. No power or incorrect voltage	(A) Plug-in the grinder. (B) Check the voltage at the wall outlet with a voltmeter. It must be 120 volts ac for 120 volt models, 100 volts for 100 volt models, and 230 volts for 230 volt models.
	2. Off/On/Start switch	(A) Momentarily press the Off/On/Start switch to the "START" position. (B) Refer to *Service* - Off/On/Start switch for testing procedures.
	3. Circuit Breaker (Not applicable on Model LPG with capacitor)	Press the "Reset" button, located on rear of the grinder. Listen carefully for a "click". This resets the motor protection circuit and indicates that an overload may have been encountered by the motor. (An overload can occur when something other than coffee is inserted into the hopper for grinding). Refer to *Service* - Circuit Breaker for testing procedure.
	4. Timer	Refer to *Service* - Timer for testing procedures.

TROUBLESHOOTING (cont.)

Problem	Probable Cause	Remedy
Grinder will not start. (Continued)	5. Motor	Each motor is equipped with a temperature and current overload protection feature which will immediately shut off the motor when an overload has occurred. Check the grinder for obstructions. Refer to *Service* - Motor for testing procedures.
	6. Relay	Refer to Service - Relay for testing procedures.
	7. Bag sensor or Cup Sensor	(A) The receiving bag must be placed on the tray screen and have the back of the bag behind the dispense chute to activate the sensor switch. (B) Refer to *Service* - Bag Sensor Switch for testing and adjustment procedures.
Grinder will not shut off.	1. Off/On/Start switch	(A) Place the switch in the "OFF" upper position. (B) Refer to *Service* - Off/On/Start Switch for testing procedures.
	2. Timer	Refer to *Service* - Timer for testing procedures.
	3. Relay	Refer to Service - Relay for testing procedures.
	4. Bag Sensor or Cup Sensor	(A) Remove bag from under the dispense chute. (B) Refer to *Service* - Bag Sensor Switch for testing procedures.

Problem	Probable Cause	Remedy
Grinder starts, but will not dispense from hopper.	1. Hopper(s)	Begin each grind cycle by visually inspecting the hopper(s) for ample supplies of whole bean coffee.
	2. Blockage of hopper(s)	Foreign materials must not block the openings at the bottom of the hopper(s).
	3. Slide Gate Solenoids (Model LPG-2E only)	Refer to *Service* - Solenoids for testing procedures.
	4. Timer	Refer to *Service* - Timer for testing procedures.
	5. Off/On/Start switch	Refer to *Service* - Off/On/Start switch for testing procedures.
	6. Slide plates	(A) Check to see that the slide plates move freely to allow beans to travel into the grind chamber. (B) Refer to *Service* -Slide Plates for testing procedures.
	7. Solenoids	Refer to *Service* - Solenoids for testing procedures.
	8. Solenoid Limit Thermostat	Refer to *Service* - Solenoids for testing procedures.
	9. Shear Plate	Remove both black fillister head screws holding the grinder selector dial plate to the grinder. Carefully remove the dial plate and rotor cup. Inspect the shear plate for wear. Replace if excessively worn or damaged.
Incorrect amount of coffee.	1. Timer adjustment	Refer to the *Adjustment* section in the Installation and Operation Manual.
	2. Snubber	Refer to *Service* - Snubber for replacement procedures.

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Incorrect coffee grind dispensed.	1. Burr adjustment	Refer to the *Adjustment* section in the Installation and Operation Manual.
Excessive chaff	1. Dechaffer	Replace the dechaffer springs. Replacement dechaffer springs are provided in the literature package accompnting the grinder.
Grinder only dispenses from one hopper	1. Hopper selector switch (Model LPG-2E only)	Refer to *Service* - Hopper selector switch for testing procedures.
Timer will not display or displays incorrectly.	1. Digital Timer	(A) Unplug the grinder. Wait a few seconds and plug it in again. (B) Refer to *Service* - Timer for testing procedures.
Incorrect weight of coffee dispensed	1. Grinder scale requires calibration.	Refer to GRINDER SCALE CALIBRATION procedure.
	2. Funnel handle touched during grinding.	Do not touch funnel or funnel handle during grinding operation.

SERVICE

This section provides procedures for testing and replacing various major components used in this grinder should service become necessary. Refer to *Troubleshooting* for assistance in determining the cause of any problem.

WARNING - Inspection, testing, and repair of electrical equipment should be performed only by qualified service personnel. The grinder should be unplugged when servicing, except when electrical tests are required and the test procedure specifically states to plug-in the grinder.

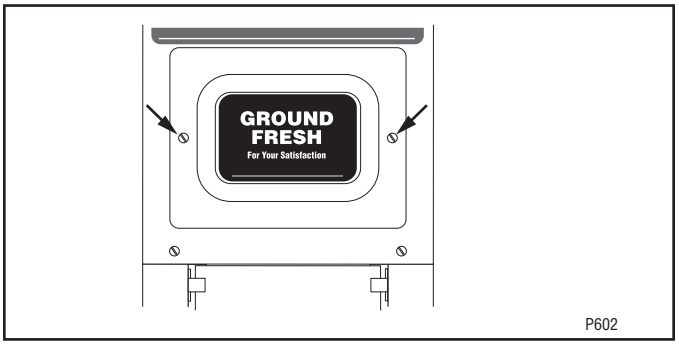
Component Access

WARNING - Unplug the grinder before the removal of any panel or the replacement of any component.

All components are accessible by the removal of the lid, hopper, or front and rear access panels. Mark and retain all screws,washers and nuts for installation.

Component Locations

Some pictures showing component locations may be general to all grinders unless the component is specific to your model.



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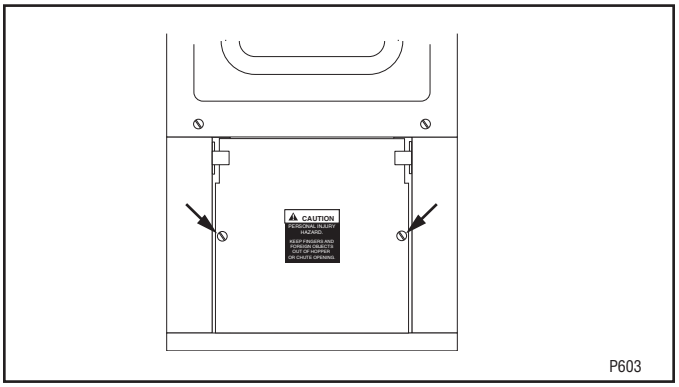

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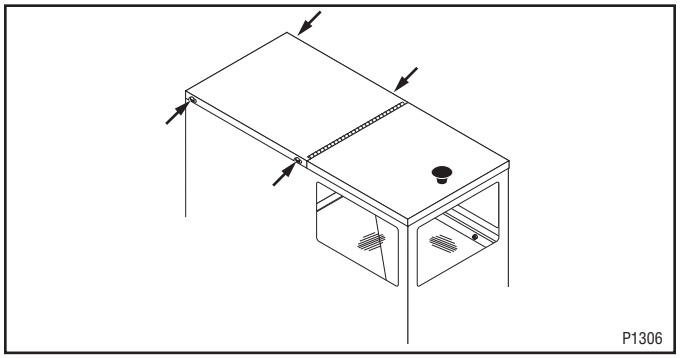
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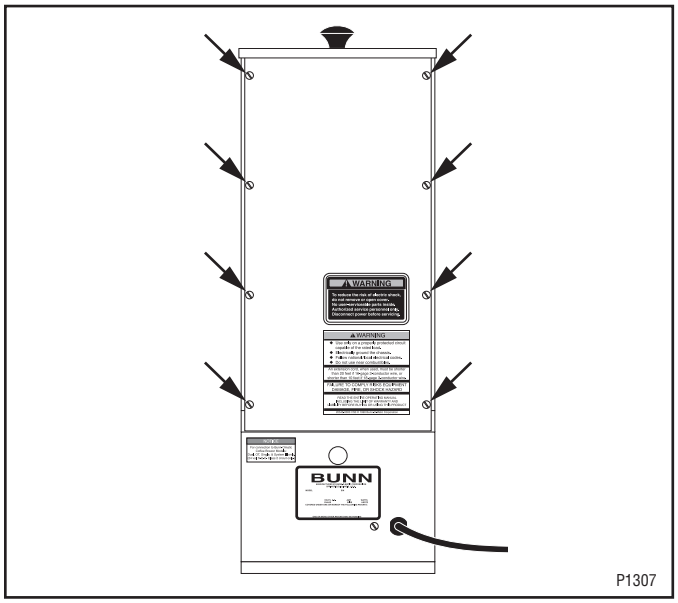

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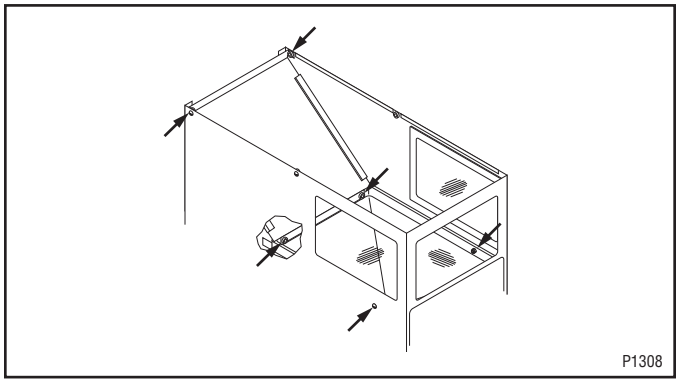

P1308

SERVICE (Cont.)

BAG SENSOR SWITCH (Models G1, G2, G3) or CUP SENSOR SWITCH (MODEL G2 TRIFECTA)

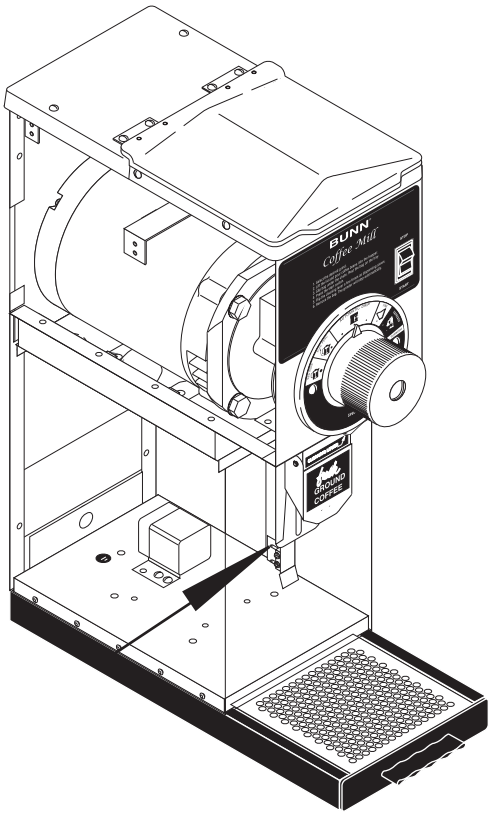


FIG. 1 BAG SENSOR SWITCH

Location:

The bag sensor switch is located inside the lower front of the grinder housing behind the coffee dispensing chute.

Test Procedure:

1. Disconnect the grinder and place a coffee bag behind the dispense chute.
2. Remove the white/violet wire from the bag sensor switch.
3. Check the voltage across the white/violet wire from the bag sensor switch and the white wire, red/black wire or red wire on the relay coil with a voltmeter. Hold the Off/On/Start switch in the "START" (lower) position and connect the grinder to the power source. The indication must be:
   a. 120 volts ac for two wire 120 volt models.
   b. 230 volts ac for two wire 230 volt models.
   c. 240 volts ac for two wire 240 volt models.
4. Disconnect the grinder from the power source.

   If voltage is present as described, proceed to #5.
   If voltage is not present as described, refer to the Wiring Diagrams and check the grinder wiring harness.

5. Check for continuity across the terminals on the bag sensor switch.

If continuity is present as described, reconnect the wires, the switch is operating properly.
If continuity is not present as described, replace the switch.

Removal and Replacement:

1. Remove the wires from the switch.
2. Remove the two #8-32 keps nuts securing the bag sensor assembly to the grinder housing.
3. Remove the two #2-56 screws, nuts and external tooth lockwashers securing the switch to the bag sensor assembly.
4. Mount the new switch to the bag sensor assembly using two #2-56 screws, nuts and external tooth lockwashers. Adjust the assembly by locating the corner of the switch housing to the top edge of the black metal mounting bracket.
5. Reattach the sensor assembly to the grinder housing and secure with two #8-32 keps nuts.
6. Refer to Fig. 2 when reconnecting the wires.

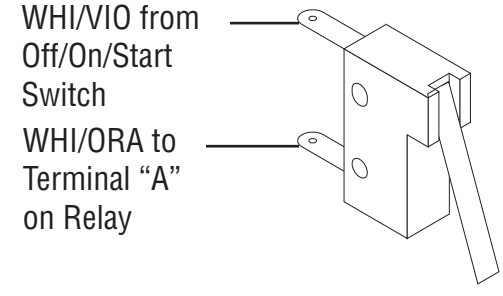


FIG. 2 BAG SENSOR SWITCH TERMINALS

SERVICE (Cont.)

AC MOTOR AND GRIND CHAMBER

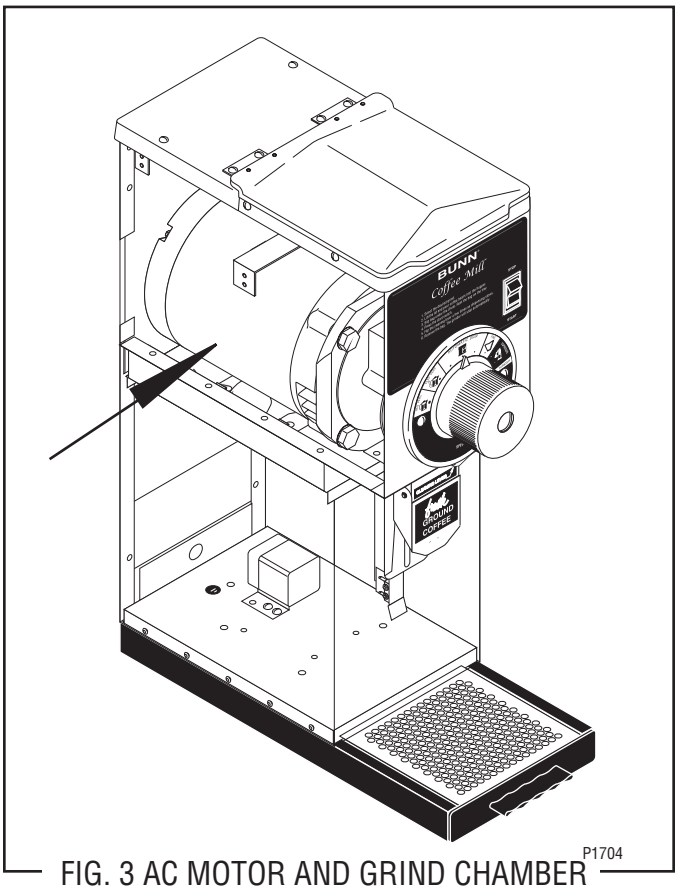


FIG. 3 AC MOTOR AND GRIND CHAMBER P1704

Location:

The motor is located inside the upper part of the grinder housing.

Test Procedure:

1. Remove the plug located on the right side of the housing. Press the red "Reset" button visible through the opening. Listen carefully for a "click". This resets the motor protection circuit and may indicate that something other than coffee was inserted into the hopper for grinding.

If the grinder remains unable to start, proceed to #2.
If the grinder stops operating shortly after starting, refer to removal and replacement instructions and inspect for foreign materials.

2. Disconnect the grinder from the power source and place a coffee bag behind the dispense chute.
3. Remove the electrical access panel at the rear of the motor.
4. Check the voltage across the white, red or red/black and white/blue wires on terminals L1 & L2 with a voltmeter. Connect the grinder to the power source. When the Off/On/Start switch is momentarily placed in the "START" (lower) position and then left in the "ON" (center) position and a bag is in place behind the coffee dispense chute. The indication must be:
   a. 120 volts ac for two wire 120 volt models.
   b. 230 volts ac for two wire 230 volt models
   c. 240 volts ac for two wire 240 volt models.
5. Disconnect the grinder from the power source.

If voltage is present as described replace the motor.
If voltage is not present as described, reconnect the white, red or red/black and white/blue wires to the motor, refer to the Wiring Diagrams and check the grinder wiring harness.

Removal and Replacement - Motor (Refer to FIG.6):

1. Remove the plate on the rear of the motor and disconnect all wires from the motor.
2. Remove the two .250"-20 screws (1) securing grind selector dial plate and grind selector knob (2) to the grind chamber. Remove dial plate and selector knob as an assembly.
3. Slide burr (7), auger rotor/spring assembly (3), shear plate (4) and burr rotor cup (5) off the grinder motor shaft as an assembly.
4. Remove the two .250"-20 screws (8) securing the stationary burr (9) to the grind chamber.
5. Remove bushing (10) and shaft extension (11) from the grinder motor shaft.
6. Remove the two #8 thread forming screws (12) securing the fill plate (13) to grinder housing and remove plate (13).
7. Remove the four #10-24 screws (14) securing the chute assembly (15) to the grind chamber and remove chute assembly (15).
8. Remove the four .250"-20 screws, flat washer and rubber washers securing the motor to the mounting bracket.
9. Remove motor out the rear of the grinder housing.
10. Remove the four .250"-20 cage nuts from the motor mount.

SERVICE (Cont.)

AC MOTOR AND GRIND CHAMBER (cont.)

11. Clean all grinding burrs and mounting surfaces before reassembly.
12. Install the four .250”-20 cage nuts on the new motor.
13. Place the new motor with hopper collar and bushing into position on the bushings on the motor mounting bracket.
14. Using four .250”-20 screws, flat washers and rubber washers secure the motor to the mounting bracket.
15. Install stationary burr (9) to the grind chamber housing using two .250”-20 screws.
16. Install burr (7) and burr auger rotor/spring assembly (3) on to motor shaft.
17. Install motor shaft extension (11) on motor shaft.
18. Align the slot in the motor shaft extension (11) with the slot in the burr auger rotor/spring assembly (6) and install shear plate (4).
19. Install burr rotor cup (5).
20. Install grind selector dial plate and grind selector knob assembly on the grind chamber housing and secure with two .250”-20 screws.
21. Refer to Fig. 4 and reconnect the wires.
22. Refer to *ADJUSTMENTS* in the Installation and Operating Manual, and reset the burrs.

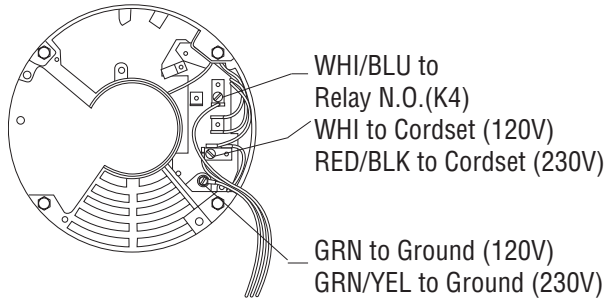


FIG. 4 AC MOTOR TERMINALS P1310

SERVICE (Cont.)

AC MOTOR AND GRIND CHAMBER (cont.)

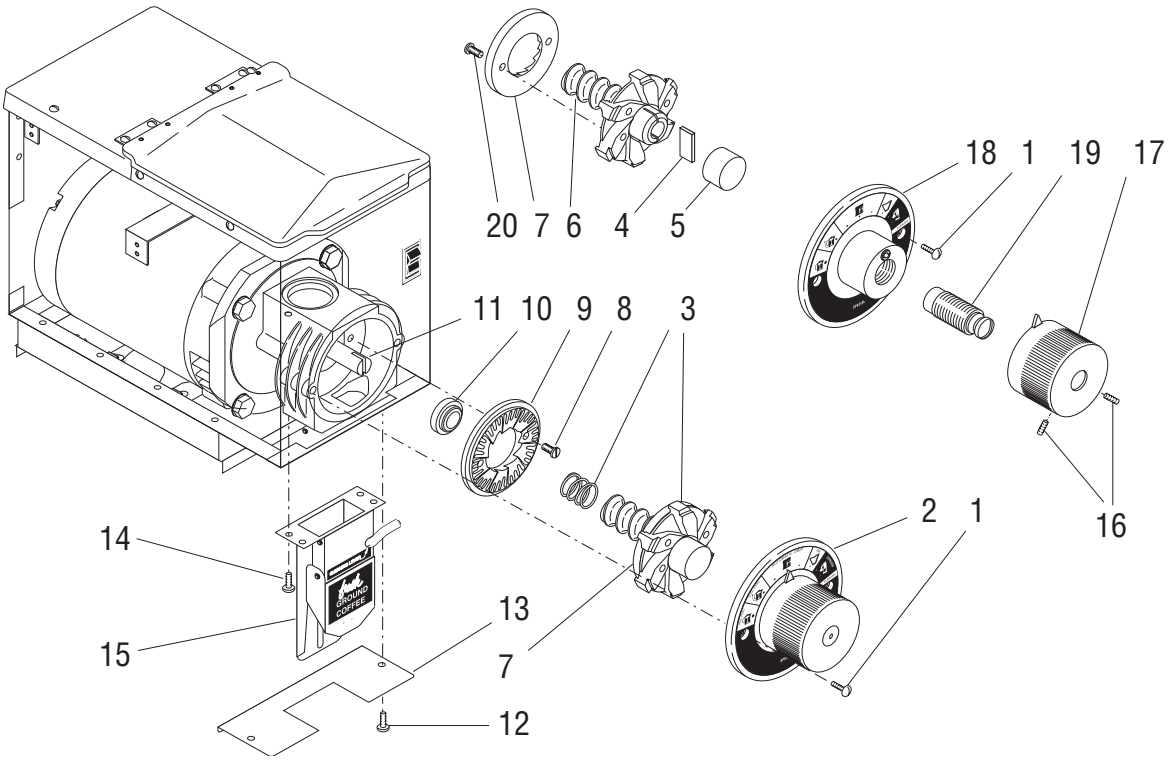


FIG. 5 GRIND CHAMBER COMPONENTS

Removal and Replacement - Grind Chamber - Fig. 5:

1. Loosen the two set screws (16) securing the grind selector knob to the grind selector dial plate (18) and remove knob.
2. Remove the adjusting screw w/bearing (19). Inspect adjusting screw w/bearing for wear. Replace if excessively worn or damaged.
3. Remove the two .250"-20 screws (1) securing the grind selector dial plate (18) to the grind housing.
4. Slide burr auger rotor/spring assembly (3) off of the grinder motor shaft with burr rotor cup (5), shear plate (4) and burr (7) as an assembly.
5. Remove burr rotor cup (5) and shear plate (4) from burr auger rotor/spring assembly (6). Inspect shear plate (4) for wear. Replace if excessively worn or damaged.
6. Remove the two .250" screws (20) securing burr (7) to burr auger rotor/spring assembly (6) and remove burr (7). Inspect burr (7) for wear. Replace if excessively worn or damaged.
7. Remove the two .250"-20 screws (8) securing the stationary burr (9) to grind chamber housing and remove burr. Inspect for wear. Replace if excessively worn or damaged.

NOTE: Burrs are serviced in sets of two with hardware.

8. Clean all grinding burrs and mounting surfaces before reassembly.
9. Remove bushing (10) and shaft extension (11) from grinder motor shaft. Inspect for wear. Replace if excessively worn or damaged.
10. Install shaft extension (11) and bushing (10) onto the grinder motor shaft.
11. Install stationary burr (9) inside the grind chamber and secure with two .250" -20 screws (8).
12. Install burr (7) on burr auger rotor/spring assembly (6) securing with two .250"-20 screws (20).
13. Slide burr auger rotor/spring assembly and burr (3) onto the motor shaft.
14. Align the slot in the shaft extension and the slot in the burr auger rotor/spring assembly and install shear plate (4).
15. Install burr rotor cup (5) onto the burr auger rotor/spring assembly (6).
16. Install the adjusting screw w/bearing (19) into the grind selector dial plate (18).
17. Install grind selector dial plate (18) with adjusting screw w/bearing (19) onto the grind chamber and secure with two .250"-20 screws (1).
18. Install grind selector knob (17) onto the grind selector dial plate (18).

NOTE: Refer to *ADJUSTMENTS* in the Installation and Operating Manual, and reset the burrs.

SERVICE (Cont.)

DC MOTOR AND GRIND CHAMBER - G1MD ONLY

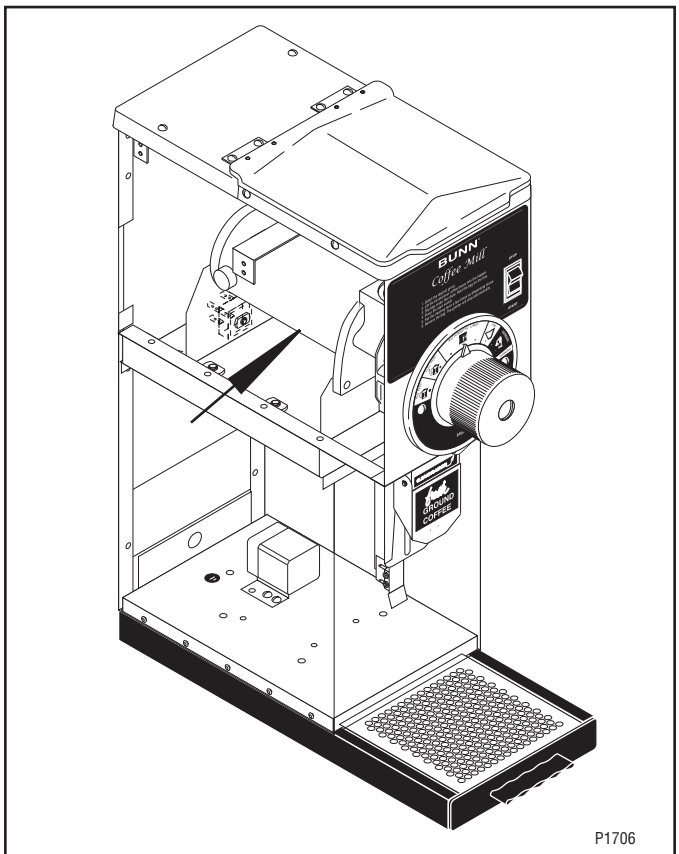


FIG. 6 DC MOTOR AND GRIND CHAMBER

Location:
The motor is located inside the upper part of the grinder housing.
Test Procedures:

1. Remove the rear panel. Press the red "Reset" button visible on the rear of the motor. Listen carefully for a "click". This resets the motor protection circuit and may indicate that something other than coffee was inserted into the hopper for grinding.

If the grinder remains unable to start, proceed to #2.
If the grinder stops operating shortly after starting, refer to removal and replacement instructions and inspect for foreign materials.

2. Disconnect the grinder from the power source and place a coffee bag behind the dispense chute.
3. Remove the black wire from the rectifier (+) terminal and the red wire from the (-) terminal.
4. Check the voltage across the (+) and (-) terminals with a voltmeter. Connect the grinder to the power source. When the Off/On/Start switch is momentarily placed in the "START" (lower) position and then left in the "ON" (center) position and a bag is in place behind the coffee dispense chute. The indication must be approximately 108 volts dc.
5. Disconnect the grinder from the power source.

If voltage is present as described replace the motor.
If voltage is not present as described, reconnect the white or red and white/blue wires to the motor, refer to the Wiring Diagrams and check the grinder wiring harness.

Removal and Replacement - Motor (Refer to Fig. 8)

1. Disconnect all wires from the motor.
2. Remove the two .250"-20 screws (1) securing grind selector dial plate and grind selector knob (2) to the grind chamber. Remove dial plate and selector knob as an assembly.
3. Slide burr (7), auger rotor/spring assembly (3) and burr rotor disc (4) off the grinder motor shaft as an assembly.
4. Remove the two .250"-20 screws (8) securing the stationary burr (9) to the grind chamber.
5. Remove bushing (10) and washer (11) from the grinder motor shaft.
6. Remove the two #8 thread forming screws (12) securing the fill plate (13) to grinder housing and remove plate (13).
7. Remove the four #10-24 screws (14) securing the chute assembly (15) to the grind chamber and remove chute assembly (15).
8. Disconnect all the wires from the rectifier (23).
9. Remove the four .312"-18 screws (20), rubber washers (22) and flat washers (21) securing the motor and bracket to the grinder housing bracket.

SERVICE (Cont.)

DC MOTOR AND GRIND CHAMBER - G1MD ONLY (cont.)

10. Remove motor and bracket out the rear of the grinder housing.
11. Remove the two .250"-20 screws securing the motor to the front of the mounting bracket.
12. Remove the two #10-32 screws securing the motor to rear of the mounting bracket.
13 Remove motor from bracket.
14. Clean all grinding burrs and mounting surfaces before reassembly.
15 Place the new motor with hopper collar into position on the motor mounting bracket.
16. Using two .250"-20 screws secure the motor to the front of the mounting bracket.
17. Using two #10-32 screws secure the motor to the rear of the mounting bracket
18. Install motor and bracket through the rear of the grinder, position on the grinder housing bracket and secure with four .312"-18 screws (20), rubber washers (22) and flat washers (21).
19. Install stationary burr (9) to the grind chamber housing using two .250"-20 screws (8).
20. Install burr (7), burr auger rotor/spring assembly (3) and burr rotor disc (4) on to motor shaft.
21. Install grind selector dial plate and grind selector knob assembly (2) on the grind chamber housing and secure with two .250"-20 screws.
22. Refer to Fig. 7 and reconnect the wires to the motor and Fig. 37 and reconnect the wires to the rectifier.
23. Refer to *ADJUSTMENTS* section and reset the burrs.

<u>Removal and Replacement - Grind Chamber - Refer to Fig. 8:</u>

1. Loosen the two set screws (16) securing the grind selector knob to the grind selector dial plate (18) and remove knob.
2. Remove the adjusting screw w/bearing (19). Inspect adjusting screw w/bearing for wear. Replace if excessively worn or damaged.

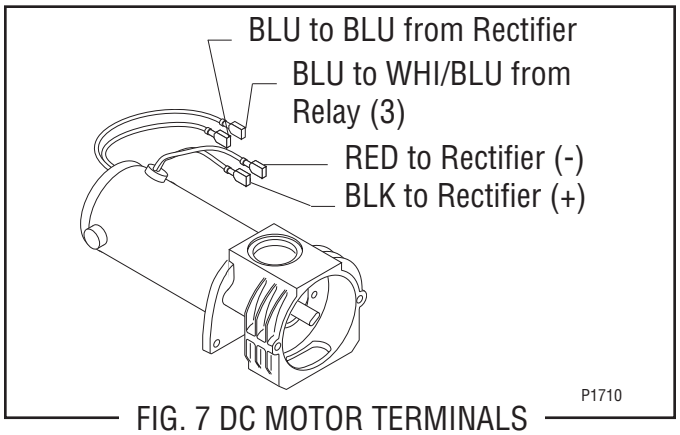


FIG. 7 DC MOTOR TERMINALS

3. Remove the two .250"-20 screws (1) securing the grind selector dial plate (18) to the grind housing and remove plate.
4. Slide burr auger rotor/spring assembly (3) off of the grinder motor shaft with burr (7) as an assembly.
5. Remove the two .250"-20 screws (5) securing burr (7) to burr auger rotor/spring assembly (6), remove burr (7) and burr rotor disc (4). Inspect burr (7) for wear. Replace if excessively worn or damaged.
6. Remove the two .250"-20 screws (8) securing the stationary burr (9) to grind chamber housing and remove burr. Inspect for wear. Replace if excessively worn or damaged.

NOTE: Burrs are serviced in sets of two with hardware.

7. Remove bushing (10) and washer (11) from grinder motor shaft. Inspect for wear. Replace if excessively worn or damaged.
8. Clean all grinding burrs and mounting surfaces before reassembly.
9. Install washer (11) and bushing (10) onto the grinder motor shaft.
10. Install stationary burr (9) inside the grind chamber and secure with two .250" -20 screws (8).

SERVICE (Cont.)

DC MOTOR AND GRIND CHAMBER - G1MD ONLY (cont.)

11. Install burr (7) on burr auger rotor/spring assembly (6) securing with two .250”-20 screws (5).
12. Slide burr auger rotor/spring assembly and burr (3) onto the motor shaft.
13. Install burr rotor disc (4).
14. Install the adjusting screw w/bearing (19) into the grind selector dial plate (18).
15. Install grind selector dial plate (18) with adjusting screw w/bearing (19) onto the grind chamber housing and secure with two .250”-20 screws (1).
16. Install grind selector knob (17) onto the grind selector dial plate (18).

NOTE: Refer to *ADJUSTMENTS* and reset the burrs.

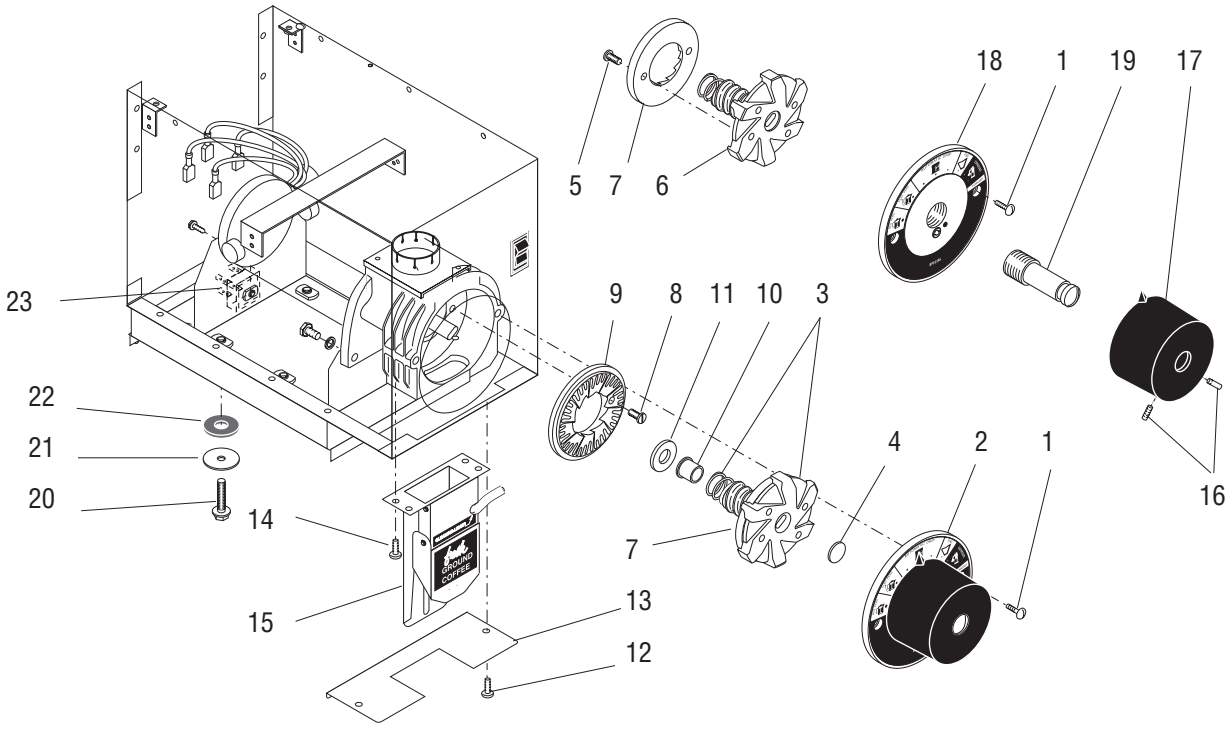


FIG. 8 MOTOR AND GRIND CHAMBER REMOVAL

SERVICE (Cont.)

MOTOR (Models LPG & FPG)

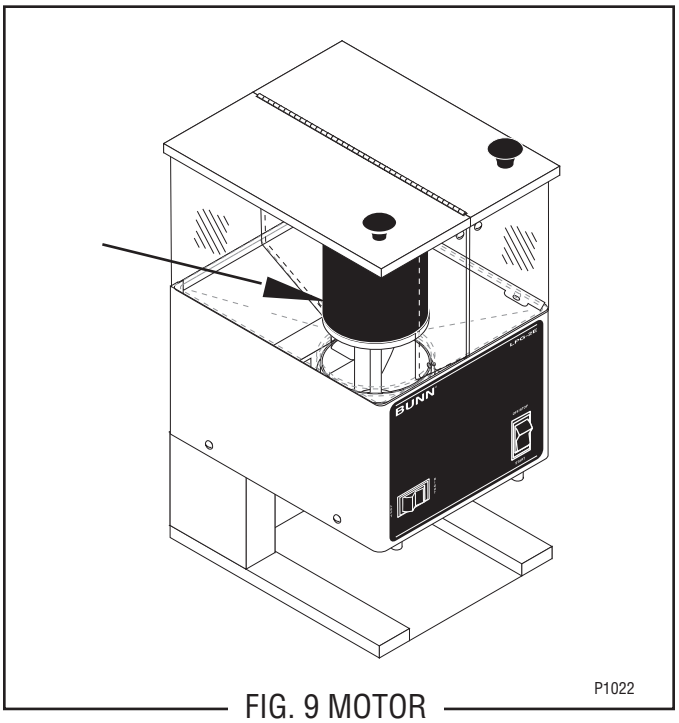


FIG. 9 MOTOR

Location:

The motor is located inside the hopper assembly.

Test Procedures:

1. Disconnect grinder from the power supply.
2. On Model LPG-2E, disconnect the black wire and the white wire to the motor from the main wiring harness, the red wire to the circuit breaker and the red wire to the Off/On/Start switch. On Model LPG disconnect the motor wiring harness from the main wiring harness.
3. Connect the leads of an ohm meter to the red wires from the motor.

If continuity is present the overload is good.

If continuity is not present the overload will not reset, replace the motor.

4. Set an ohm meter to read at least 20 ohms. Connect the leads from the ohm meter to the black wire and the white from the motor. The ohm reading should be approximately 18 ohms. Using the bean agitator slowly rotate the motor shaft in approximately 1/8 turn steps through one full rotation. If ohm readings are consistent motor windings are good. If readings vary more than ±1 ohm, replace motor.

NOTE: Clean all grind burrs and mounting surfaces before reassembly.

Removal and Replacement:

1. On Model LPG-2E, disconnect the black wire and the white wire to the motor from the main wiring harness, the red wire to the circuit breaker and the red wire to the Off/On/Start switch. On Model LPG disconnect the motor wiring harness from the main wiring harness.
2. On Model LPG-2E, disconnect the red wire from the left and right solenoid, the orange wire from the left solenoid and the violet wire from the right solenoid.

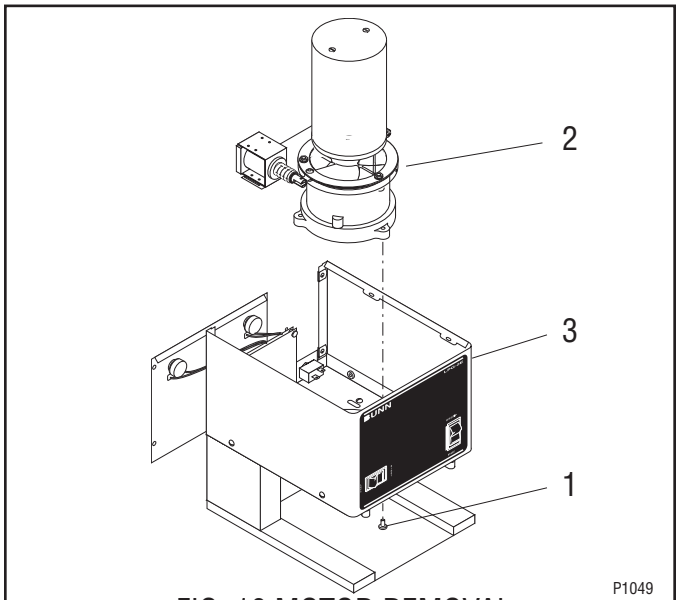


FIG. 10 MOTOR REMOVAL

3. Refer to Fig 10. Remove the three #10-32 x .25" screws (1) securing the motor to the motor support bracket.
4. Remove the motor, solenoid and solenoid components (2) from the hopper housing (3) as an assembly.

NOTE: Steps 5 thru 12 apply only to Model LPG-2E.

5. Refer to Fig.11. Remove the three #8-32 Keps nuts.
6. Lift the retaining ring w/hopper gasket (1) over the motor and burr housing assembly (6). Set aside for reassembly.
7. Lift slide plate, solenoid plunger and spring (2) off of the dowel pin in the mounting ring and slide solenoid plunger and spring (2) out of solenoid coil. Set aside for reassembly. Repeat for opposite side.

SERVICE (Cont.)

MOTOR (Models LPG & FPG)

8. Remove spacer plate (3) and set aside for reassembly.
9. Lift solenoid bracket and solenoids (4) over the motor and burr housing assembly (6) and set aside for reassembly.
10. Remove the #8-32 setscrew (5) and set aside for reassembly.
11. Lay motor on it's side.

NOTE: Refer to Fig. 14 for the disassembly and assembly of the burrs and rotor.

12. Remove the two #10-32 fillister head screw securing burr housing cap (10) to the burr housing.
13. Remove cap, burr adjusting screw, decaffing plate and decaffer support (10) as an assembly. Set aside for reassembly.
14. Remove load disc (11) and set aside for reassembly.
15. Slide rotor (12), lower burr (13) and spring (14) as an assembly off the motor shaft, set aside for reassembly.
16. Remove burr housing divider (8) and set aside for reassembly.

NOTE: Inspect rotor. If rotor needs to be replaced, remove the two #10-32 binding head screws securing lower burr (13) to the rotor and remove burr. Install lower burr (13) on new rotor (12) using two #10-32 binding head screws.

17. Slide spring retaining bushing (15) off the motor shaft and set aside for reassembly.
18. Remove the two #10-32 binding head screws securing the upper burr (16) to the motor and housing assembly (17).
19. Remove the upper burr (16) and set aside for reassembly.

NOTE: If burrs need to be replaced, they must be replaced in matched pairs.

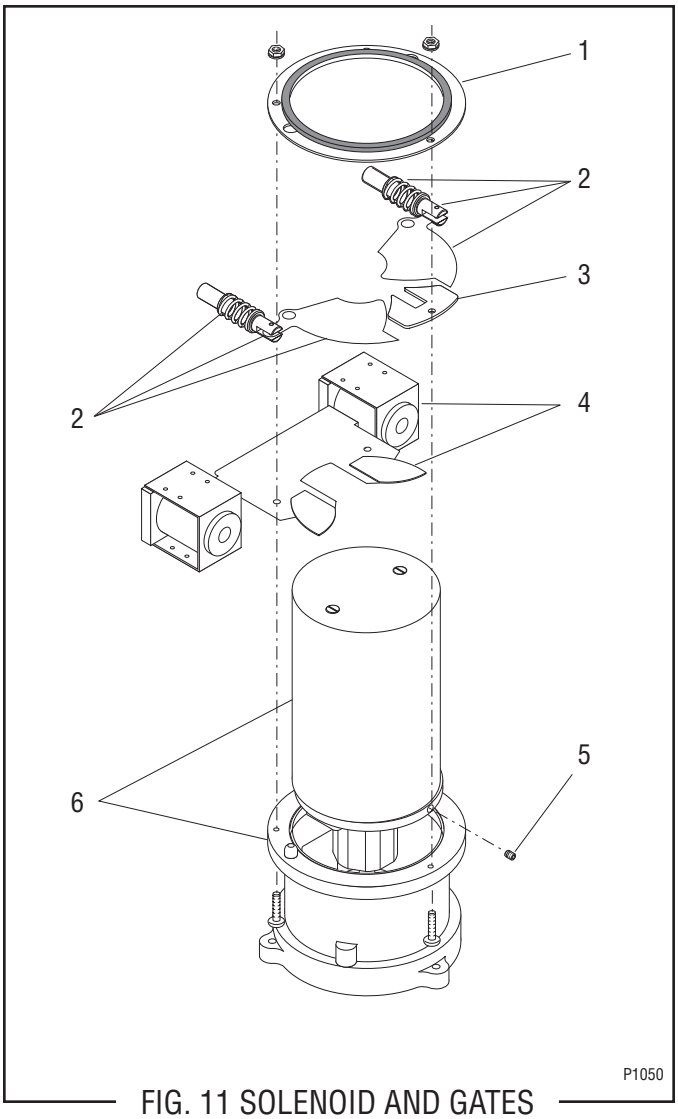


FIG. 11 SOLENOID AND GATES

1. Retaining Ring W/Hopper Gasket
2. Slide Plate, Solenoid Plunger and Spring
3. Spacer Plate
4. Mounting Ring, Solenoid and Solenoid Mounting Plate
5. Setscrew, #8-32
6. Motor and Burr Housing

SERVICE (Cont.)

MOTOR (Models LPG & FPG)

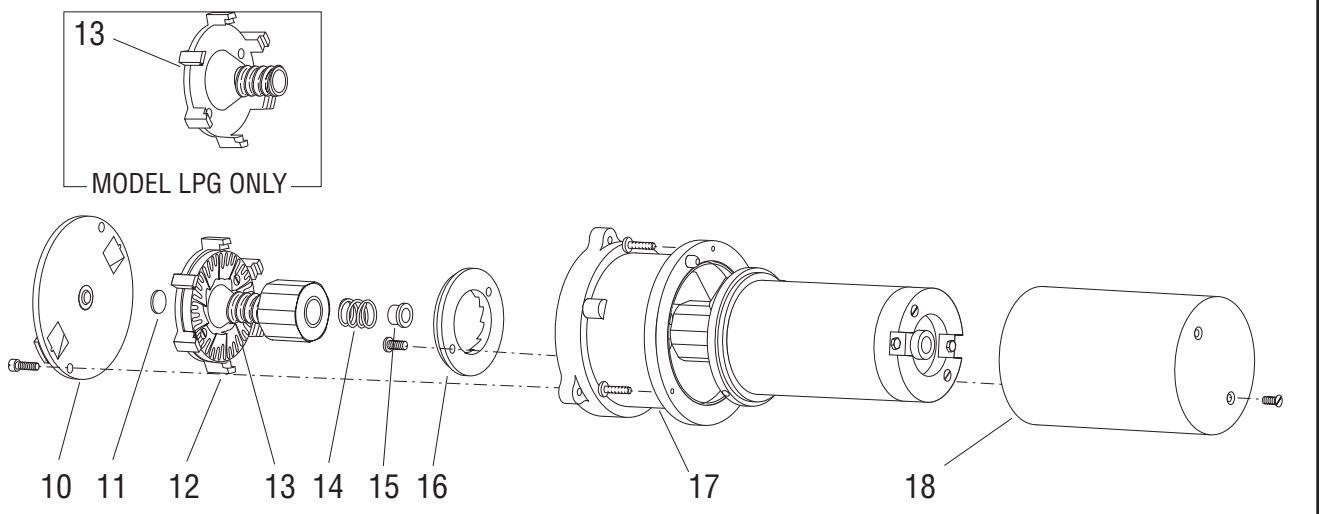


FIG. 12 ROTOR/AUGER, BURRS AND MOTOR COVER

20. Remove the two #8-32 flat head screws securing the motor cover (18) to the motor and housing assembly (17) and remove the cover. Set aside for reassembly.
21. Discard old motor and housing assembly.
22. Place new motor on it's side and install motor cover (18) using two #8-32 flat head screws.
23. Install upper burr (16) to the new motor and housing assembly (17) using two #10-32 binding head screws.
24. Install spring retaining bushing (15) on motor shaft.
25. Refer to Fig. 11. Install burr housing divider (8) in slot in the burr housing and secure with #8-32 cup point setscrew (7), for Model LPG-2E only.
26. Refer to Fig. 12. Install rotor (12), lower burr (13) and spring (14) as an assembly on the motor shaft.
27. Install load disc (11) flat side towards rotor.
28. Install burr housing cap (10), adjusting screw, dechaffing spring plate and dechaffer support as an assembly to the new motor and housing assembly (17) using two #10-32 fillister head screws.
29. Set motor upright with burr housing at the bottom.

NOTE: Steps 30 thru 33 apply only to Model LPG-2E.

30. Install solenoids and solenoid bracket (4) as an assembly on the new motor.
31. Install spacer plate (3) making sure the hole in the spacer plate aligns with the hole in the mounting ring.
32. Install solenoid plunger with spring and slide plate (2) as an assembly into the solenoid coil. Place slide plate on the dowel in the mounting ring. Repeat for the opposite side.
33. Install retaining ring w/hopper gasket (1) using three #8-32 pan head screws and three #8-32 keps nuts.
34. Refer to Fig. 10. Install motor, solenoids and solenoid components (2) in the hopper housing (3) using three #10-32 truss head screws (1).
35. Reconnect wires for motor and solenoids. Refer to wiring schematic.

SERVICE (Cont.)

DECHAFFER (Models LPG & FPG)

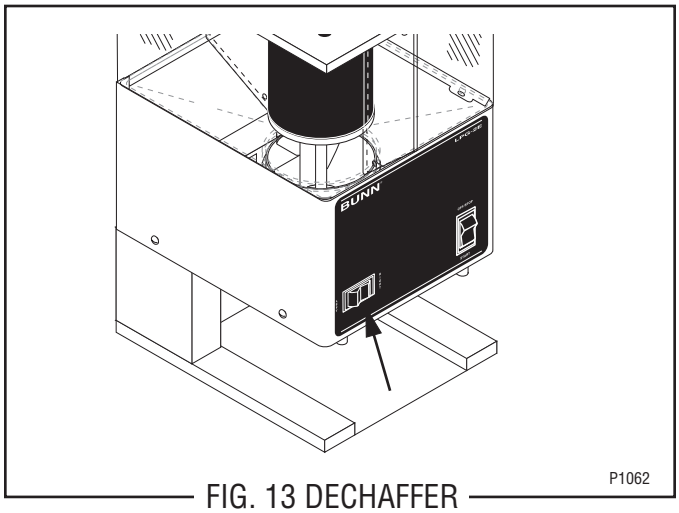


FIG. 13 DECHAFFER

Location:

The dechaffer spring plates are located in the burr housing cap.

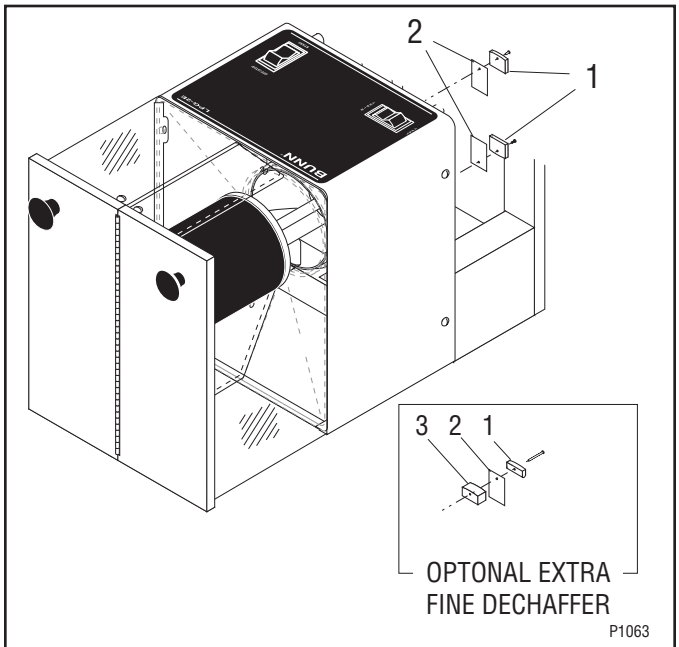


FIG. 14 DECHAFFER REMOVAL/REPLACEMENT

Removal and Replacement: Refer to Fig. 14

1. Remove coffee beans from hopper(s).
2. Lay grinder on it's back.
3. Remove the #4-40 truss head screw securing dechaffer support (1) to the burr housing cap.
4. Remove dechaffer support (1).
5. Remove dechaffer spring plate (2) from burr hosing cap.
6. For models with extra fine dechaffer, remove dechaffer support (3).
7 Place new dechaffer spring plate (2) in the slot in the burr housing cap.
8. Place dechaffer support (1) over dechaffer spring plate (2), support (3) and secure with a #4-40 truss head screw.

SERVICE (Cont.)

MOTOR (Models G9, G9-2, MHG)

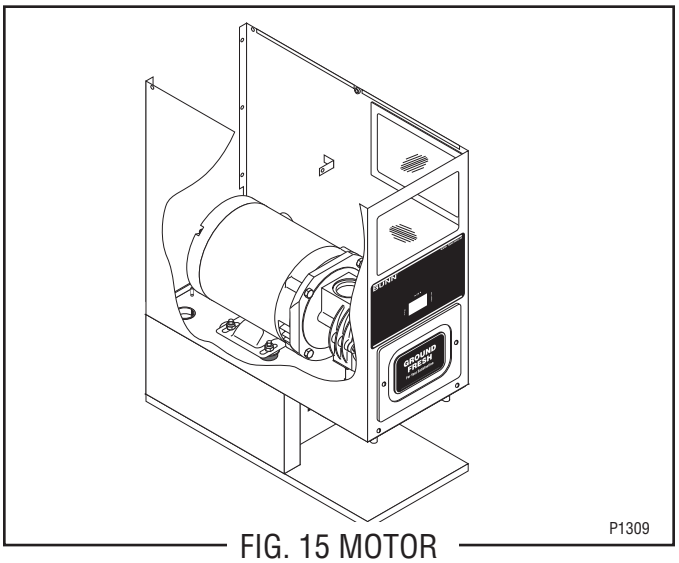


FIG. 15 MOTOR

Location:

The motor is located in the upper wrapper under the hopper.

Test Procedure:

1. Remove the hole plug located on the right side of the housing. Press the red “Reset” button visible through the opening. Listen carefully for a “click”. This resets the motor protection circuit and may indicate that something other than coffee was inserted into the hopper for grinding.

If the grinder remains unable to start, proceed to step 2.
If the grinder stops operating shortly after starting, refer to the removal and replacement steps to gain access-to the grind chamber. Remove any foreign materials that may be found.

2. Disconnect the grinder from the power supply.
3. Remove the electrical access panel at the rear of the motor.
4. Check the voltage across terminals L1 & L2 of the motor with a voltmeter when the Off/On/Start switch is placed in the “START” (right) position and released. Connect the grinder to the power supply. The indication must be:
   (a) 120 volts ac for two wire 120 volt models.
   (b) 240 volts ac for two wire 240 volt models.
5. Disconnect the grinder from the power supply.

If voltage is present as described and the grinder remains unable to start, replace the motor.
If voltage is not present as described, refer to the Wiring Diagrams, and check the grinder wiring harness.

Removal and Replacement - MOTOR

1. Remove all wires from the Off/On/Start switch, motor, and motor mounting plate.
2. The entire wiring harness must be fed into the bottom of the grinder housing through the hole in the motor mounting plate.
3. Remove both 6-32 screws beneath the upper front inspection panel.
4. Remove the six 10-32, hex head screws on top of the motor mounting plate.
5. Slowly slide the assembly out the rear of the grinder housing. The mounting plate will have to be raised to gain clearance for the motor hardware and wiring harness bushing.
6. Remove the four 5/16”-18 bolts and nuts to separate the motor from the mounting plate.
7. Mount the new motor and tighten the four bolts and nuts. They should be tightened approximately one full turn past snug.
8. Slide the motor mounting plate into the rear of the grinder housing.
9. Feed the wiring harness into the top of the housing through the hole in the motor plate.
10. Reinstall the six 10-32 hex head screws through the motor plate and the two 6-32 screws through the housing.
11. Reattach the green wire to the 10-32 stud on the motor mounting plate.
12. Refer to the Off/On/Start switch section when reconnecting the switch wires.
13. Refer to the illustration below when reconnecting the motor wires.

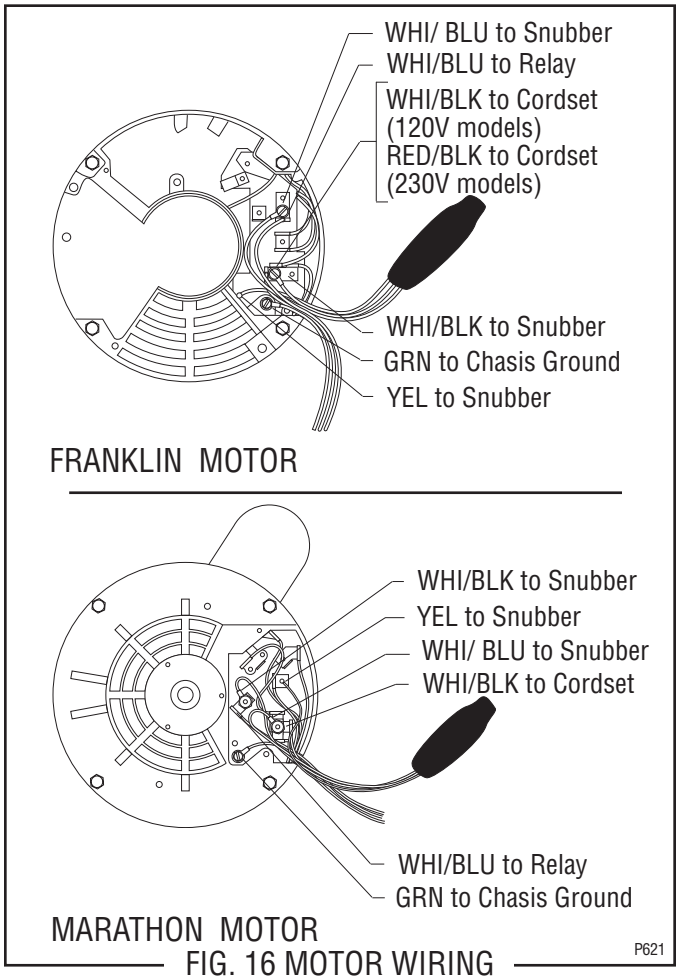


FIG. 16 MOTOR WIRING

SERVICE (Cont.)

MOTOR (Models G9, G9-2, MHG)

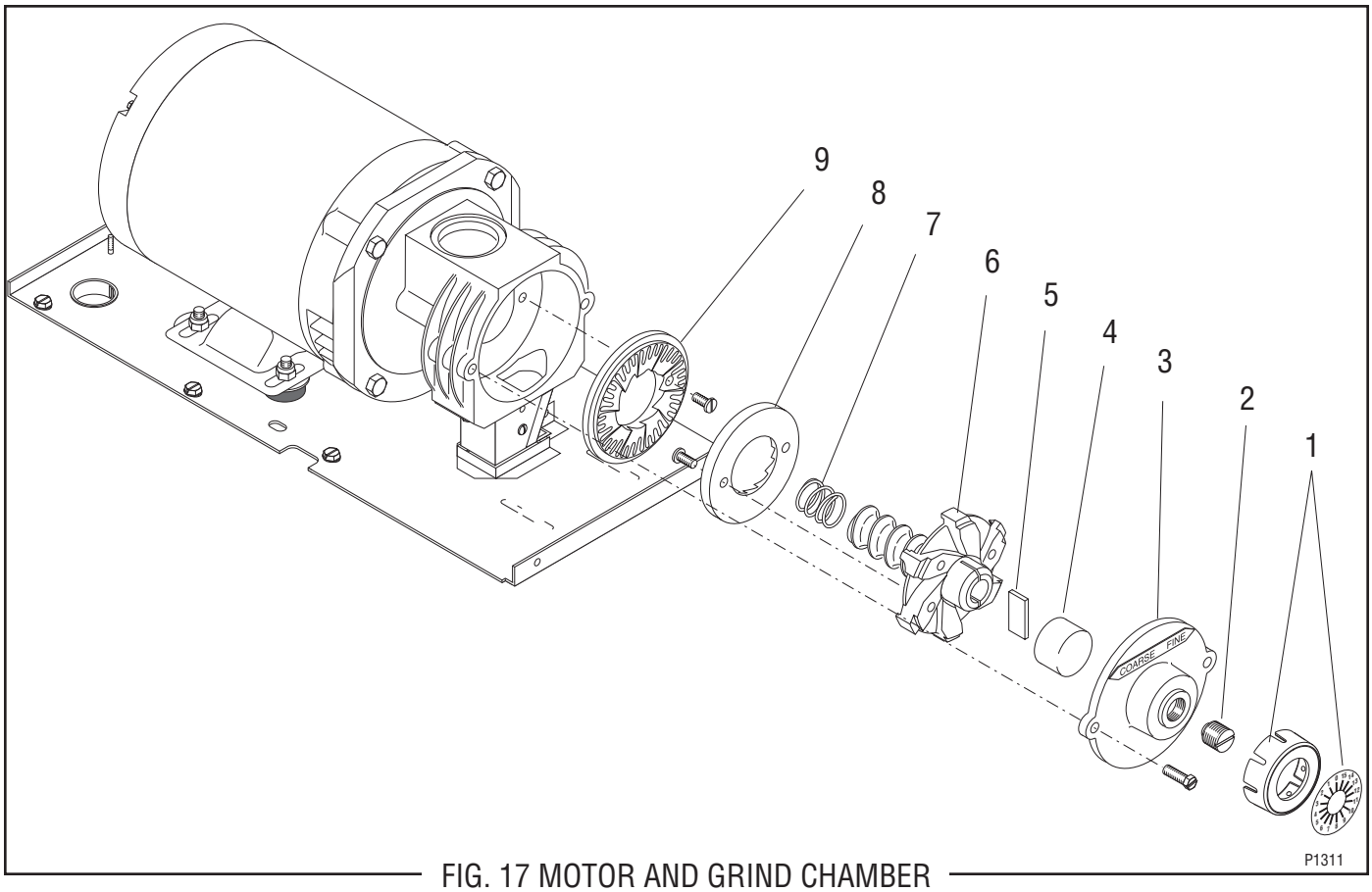


FIG. 17 MOTOR AND GRIND CHAMBER

1. Indicator Adjustment Cap & Decal
2. Adjusting Screw
3. Burr Housing Cap
4. Rotor Cup
5. Shear Plate
6. Rotor
7. Spring
8. Burr (Rotating)
9. Burr (Stationary)

Removal and Replacement - GRIND CHAMBER

1. Refer to the illustration above and remove the two 1/4”-20, hex head screws holding the burr housing cap(3) to the burr housing; carefully remove the burr housing cap. Inspect the adjusting screw(2) to see if the thrust plug is worn.
   Replace if excessively worn or damaged.
2. Carefully remove rotor cup(4), shear plate(5), and burr rotor(6) from the grinder. Inspect the shear plate and burr(8) for wear.
   Replace if excessively worn or damaged.
3. Remove and inspect stationary burr(9) for wear.
   Replace if excessively worn or damaged.
4. Inspect the grind chamber and remove any foreign materials. The burrs will not properly seat in the chamber if any material or coffee particles remain.
5. Reinstall the stationary burr, spring, burr rotor, shear plate, rotor cup, and burr housing cap to the burr housing.
6. Refer to *ADJUSTMENTS* in the Installation and Operating Manual to vary the grind dispensed.

NOTE: Burrs must be replaced as a set.

SERVICE (Cont.)

SNUBBER (Models G9, G9-2, MHG)

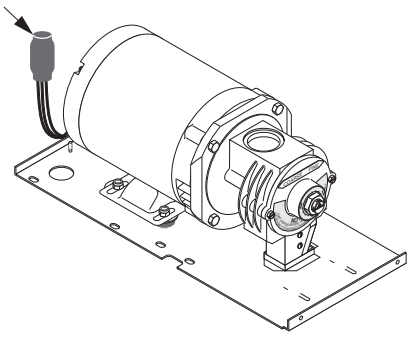


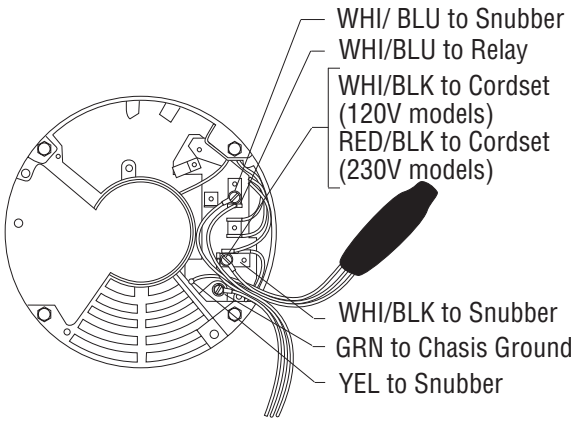
FIG. 18 SNUBBER

Location:

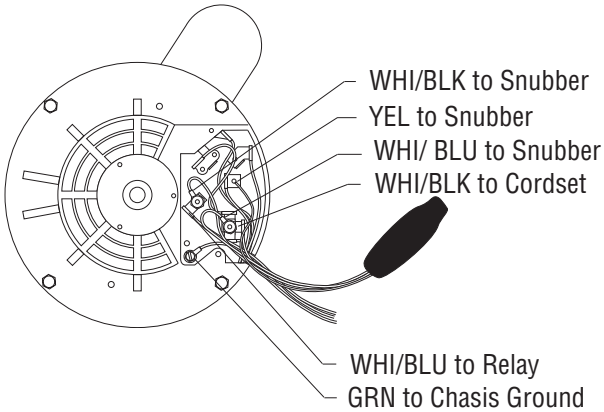
The snubber is located at the back of the motor attached to the right side of the wiring harness.

Removal and Replacement:

1. Remove snubber wires from the motor terminals.
2. Cut the ties holding snubber to the wiring harness.
3. Refer to the following illustration when reconnecting the wires.
4. Fasten snubber to the wiring harness using new ties.



FRANKLIN MOTOR



MARATHON MOTOR

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FIG. 19 SNUBBER

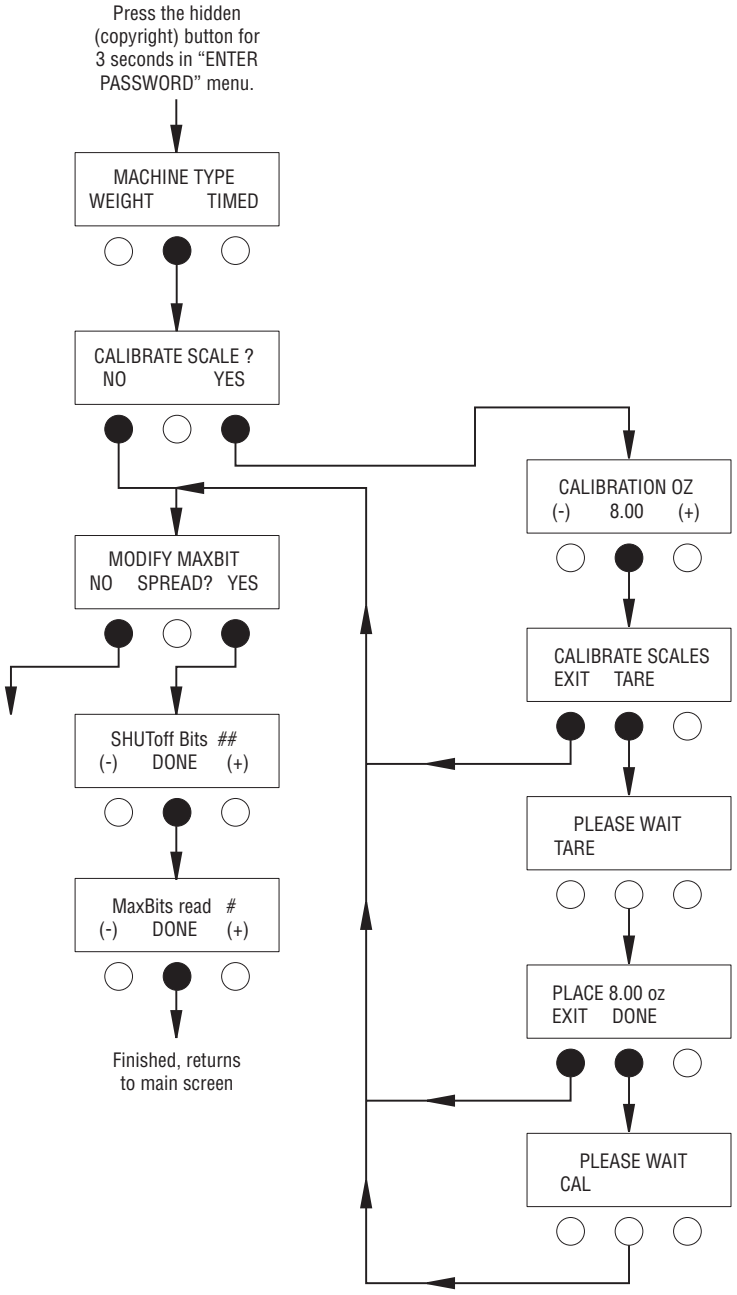
SERVICE (Cont.)

Grinder Scale (Model G9WD only)

CALIBRATION

1. Place empty funnel into funnel rails.
2. Press and hold the right hidden (copyright) button until the “MACHINE TYPE” menu appears. (See level 2 programming)
3. Press the middle button under the screen until the “CALIBRATE SCALES?” menu appears.
4. Press the right button under “YES” in the “CALIBRATE SCALES?” screen.
5. Press the middle button under “TARE”.
6. When the “PLACE 8oz” screen appears, remove the funnel, and place a calibrated 8oz weight in the funnel. Replace the funnel in the funnel rails.
7. Press the middle button under “DONE”. The grinder will go through a calibration, and then return to the main screen when calibration is complete.
8. Remove the weight from the funnel. The grinder is now ready calibrated and ready for normal operation.

LEVEL 2 FUNCTIONS:



SERVICE (Cont.)

Capacitor (Model LPG only)

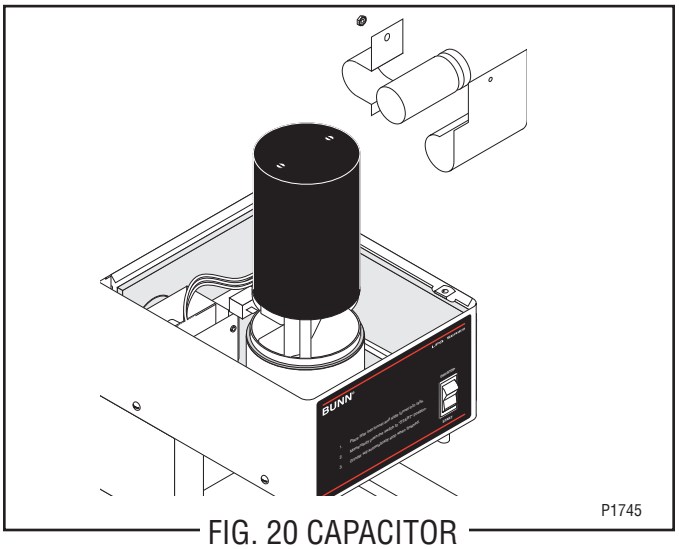


FIG. 20 CAPACITOR

Location:

The capacitor is located inside the front panel of the hopper housing next to the Off/On/Start switch.

Test Procedure:

1. Disconnect grinder from the power source.
2. Visually inspect the capacitor for leakage. If leakage is visible, replace the capacitor.
3. Connect the grinder to the power source, if the motor does not run, disconnect the capacitor wiring harness from the main wiring harness. If the motor now runs, replace the capacitor.

Removal and Replacement:

1. Disconnect the capacitor wiring harness from the main wiring harness.
2. Remove the #8-32 nut attaching the capacitor and mounting bracket to the hopper housing and remove the bracket, shield, capacitor and capacitor wiring harness as an assembly.
3. Disconnect the wiring harness from the capacitor and attach it to a new capacitor making sure the black wire attaches to the positive (+) pole, FIG. 21.
4. Wrap the shield around the capacitor and place into the mounting bracket. Slide the lower tab of the mounting bracket between the wrapper and base and secure in place over the mounting stud with the #8-32 nut.
5. Reconnect the wiring harness to the main wiring harness.

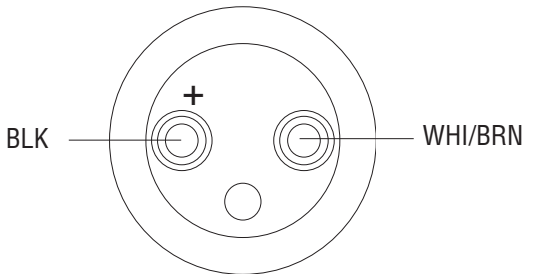


FIG. 21 CAPACITOR TERMINALS

SERVICE (Cont.)

Circuit Breaker (Models LPG, LPG-2E, FPG, FPG-2 DBC)

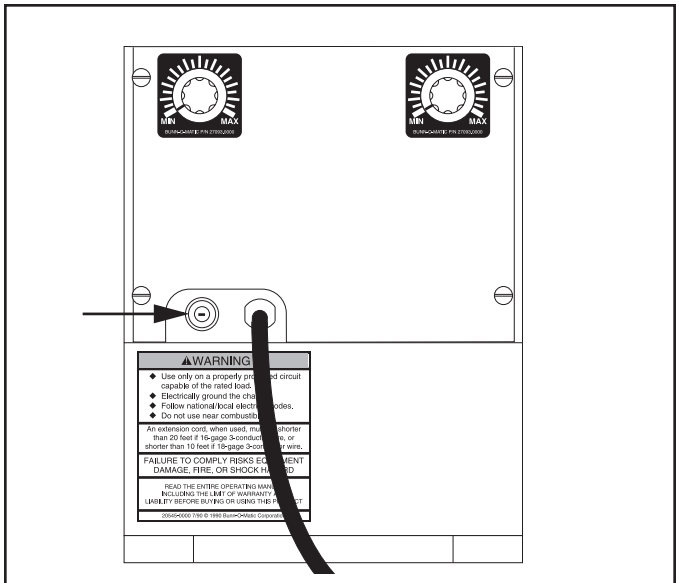


FIG. 22 CIRCUIT BREAKER P1036

Location:

The circuit breaker is located on the rear of the grinder next to the power cord strain relief bushing. The circuit breaker is not available on Model LPG equipped with capacitor.

Test Procedure:

1. Disconnect grinder from the power source.
2. Remove the wires from the circuit breaker.
3. Check for continuity between the terminals. Continuity must be present between the terminals.

If continuity is present as described the circuit breaker is functioning properly.

If continuity is not present as described, press reset button and repeat step #3, if continuity is not present as described, replace the circuit breaker.

Removal and Replacement:

1. Remove the wires from the circuit breaker.
2. Remove the face nut securing circuit breaker to the motor support.
3. Remove circuit breaker.
4. Install new circuit breaker in motor support and secure with face nut.
5. Reconnect the wires.
6. Refer to FIG. 23 when reconnecting the wires.

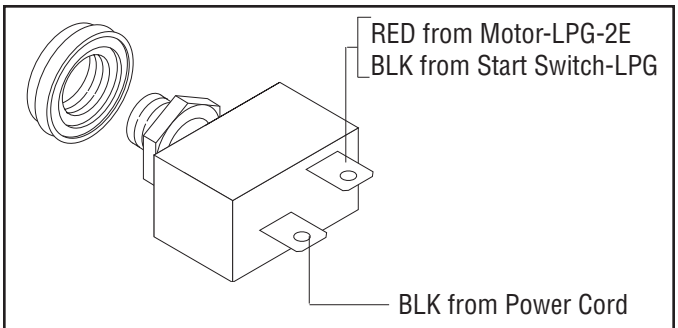
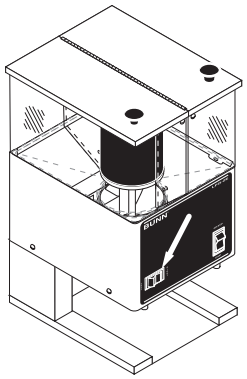


FIG. 23 CIRCUIT BREAKER TERMINALS P1037

SERVICE (Cont.)

Hopper Selector Switch (Model LPG-2E only)



P1029

FIG. 24 HOPPER SELECTOR SWITCH

Location:

The Hopper Selector Switch is located in the lower left front of the hopper housing.

Test Procedure:

1. Disconnect grinder from the power supply.
2. Remove all wires from the switch terminals.
3. Check that the switch is installed properly, FIG. 25.
4. Place the selector switch in the left position.
5. Check for continuity across the terminals on the rear of the switch.

If continuity is present as described proceed to #6.
If continuity is not present as described, replace the switch.

6. Place the selector switch in the right position.
7. Check for continuity across the terminals on the rear of the switch. Continuity should not be present across terminals in the right position.

If continuity is not present as described, reconnect the wires, the switch is operating properly.
If continuity is present replace the switch.

Removal and Replacement:

1. Remove all wires from the switch terminals.
2. Compress the clips inside the front of the housing and gently push the switch through the opening.
3. Push the new switch into the opening and spread the clips to retain the switch in the housing.
4. Refer to Fig. 25 when reconnecting the wires.

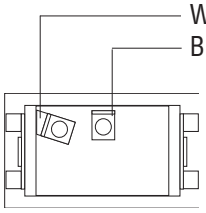


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FIG. 25 HOPPER SELECTOR SWITCH TERMINALS
(Viewed from rear)

SERVICE (Cont.)

Hopper Selector Switch (Model G9-2 only)

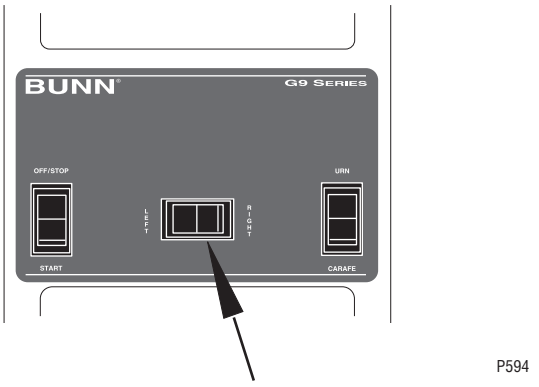


FIG. 26 HOPPER SELECTOR SWITCH

Location:

The hopper selector switch is located in the center on the front of the hopper housing.

Test Procedure:

1. Disconnect the grinder from the power source.
2. Remove all wires from the switch terminals.
3. Place the selector switch in the left position.
4 Check for continuity across the center and right terminals on the rear of the switch.
5. Continuity must not be present across the center and left terminals on the rear of the switch.
6. Check the bottom row, then the top row of terminals.

If continuity is present as described proceed to #7.
If Continuity is not present as described replace the switch.

7. Place the selector switch in the right position.
8. Check for continuity across the center and left terminals on the rear of the switch.
9. Continuity must not be present across the center and right terminals on the rear of the switch.
10. Check the bottom row, then the top row.

If continuity is present as described, reconnect the wires, the switch is operating properly.
If continuity is not present as described, replace the switch.

Removal and Replacement:

1. Remove all wires from the switch terminals.
2. Compress the clips inside the front of the housing and gently push the switch through the opening.
3. Push the new switch into the opening and spread the clips to retain the switch in the housing.
4. Refer to Fig. below when reconnecting the wires.

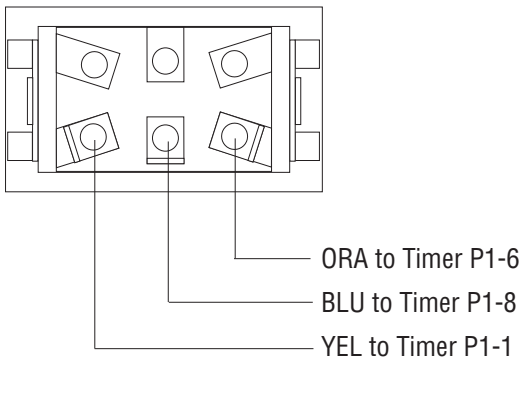


FIG. 27 HOPPER SELECTOR SWITCH TERMINALS

SERVICE (Cont.)

Off/On/Start Switch (Models LPG, LPG-2E, FPG, G-1,G-2,G-3, G9, G9-2, G2 trifecta)

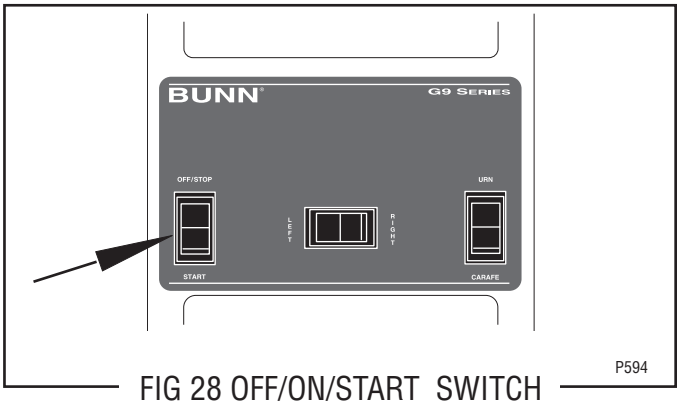


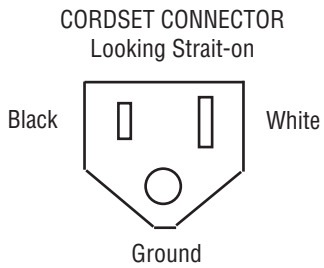
FIG 28 OFF/ON/START SWITCH

Location:

The Off/On/Start switch is located to the left side on the front of the housing above the upper front inspection panel.

Test Procedure:

1. Unplug the grinder.
2. Remove the black wire from the switch.
3. Check for continuity across the black wire from the Off/On/Start switch and the left blade of the cordset connector (see illustration below).



If continuity is present as described, proceed to #4.
If continuity is not present as described, refer to the *Wiring Diagrams* and check the grinder wiring harness.

4. Remove the remaining wires from the switch.
5. Check for continuity across the left terminals when the switch is placed in both the "ON" (center) and "START" (lower) positions. Continuity must not be present in the "OFF" position.

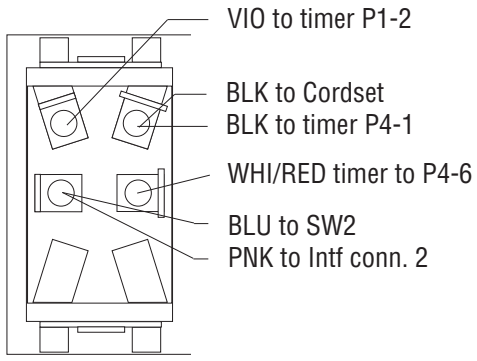
If continuity is present as described, proceed to #6.
If continuity is not present as described, replace the switch.

6. Check for continuity across the right terminals when the switch is placed in the "START" (lower) position only. Continuity must not be present in the "OFF" position.

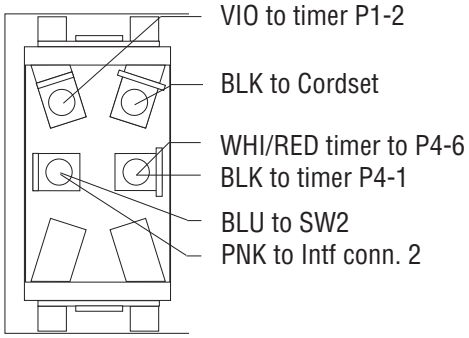
If continuity is present as described, the Off/On/Start switch is operating properly.
If continuity is not present as described, replace the switch.

Removal and Replacement:

1. Remove all wires from the switch terminals.
2. Compress the clips inside the front wrapper and gently push the switch through the opening.
3. Push the new switch into the opening and spread the clips to retain the switch in the hood.
4. Refer to the following illustration when reconnecting the wires.



Grinders with Digital Timer



Grinders with Analog Timer

P606

FIG 29 OFF/ON/START SWITCH TERMINALS

SERVICE (Cont.)

Urn/Carafe Switch (Models G9, G9-2)

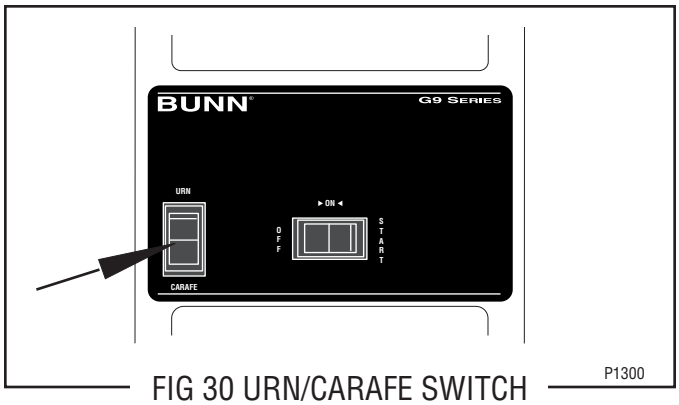


FIG 30 URN/CARAFE SWITCH

Location:

The Urn/Carafe switch is located to the left side on the front of the housing above the upper inspection panel.

Test Procedure:

1. Disconnect the grinder from the power supply.
2. Remove the tan, yellow and green wires from the switch.
3. Place the switch in the "CARAFE" position; check for continuity across the pink and the tan wire terminals, also across the orange and the yellow wire terminals.

If continuity is present as described in both checks, proceed to step 4.
If continuity is not present as described in one or both of the checks, replace the switch.

4. Place the switch in the "URN" position; check for continuity across the orange and green wire terminals.

If continuity is present as described, the switch is operating properly.

If continuity is not present as described, replace the switch.

Removal and Replacement:

1. Remove all the wires from the switch terminals.
2. Compress the clips inside the housing and gently push the switch through the opening.
3. Push the new switch into the opening and spead the clips to hold the switch in the housing.
4. Refer to the illustration below when reconnecting the wires.

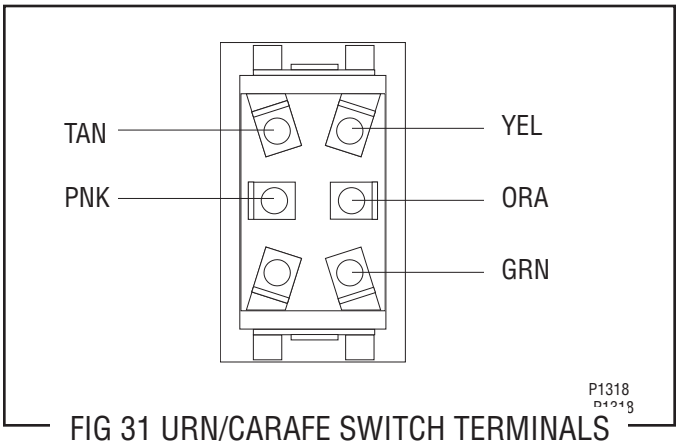


FIG 31 URN/CARAFE SWITCH TERMINALS

SERVICE (Cont.)

Batch Selector Switch (Model FPG)

FIG 32 BATCH SELECTOR SWITCH

Location:

The batch selector switch is located on the left front of the hopper housing.

Test Procedure:

1. Disconnect the grinder from the power source.
2. Open hopper lid and loosen four screws inside the hopper and remove hopper.
3. The ORN wire is connected to the common terminal "a" on the rear of the switch.
4. The TAN wire for the SMALL selection is connected to terminal 1, the GRY wire for the MEDIUM selection is connected to terminal 2, the PNK wire for the LARGE selection is connected to terminal 3.
5. Remove all wires from the switch terminals.
6. Set the switch in the SMALL position. Check for continuity between terminal "a" and terminal 1.
7. Set the switch in the MEDIUM position. Check for continuity between terminal "a" and terminal 2.
8. Set the switch in the LARGE position. Check for continuity between terminal "a" and terminal 3.

If continuity is present at all positions, the switch is operating properly.
If continuity is not present at any position, replace the switch.

9. Refer to the Fig. 33 when reconnecting wires.

Removal and Replacement:

1. Disconnect the grinder from the power source.
2. Remove the four 8-32 screws attaching the rear access panel and move aside.
3. Remove all wires from the batch selector switch terminals.
4. Loosen the setscrew on the switch knob and remove the knob.
5. Remove the nut and lockwasher attaching the switch to the hopper housing.
6. Remove the 6-32 screw attaching the switch to the hopper housing.
7. Remove and discard the old switch.
8. Refer to Fig 33 when reconnecting wires.

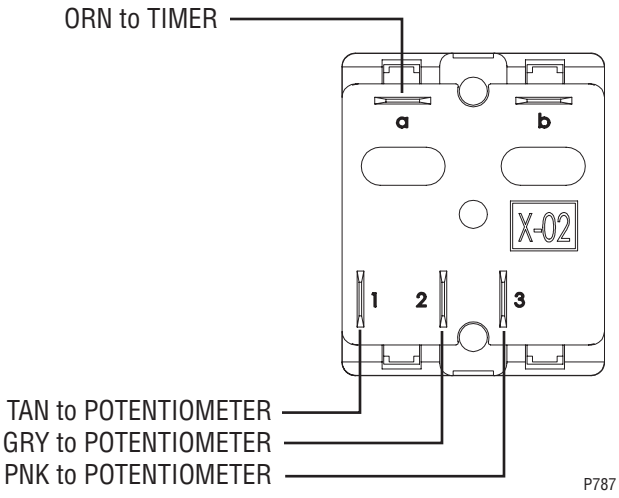


FIG 33 BATCH SELECTOR SWITCH TERMINALS

SERVICE (Cont.)

Potentiometer (Model FPG)

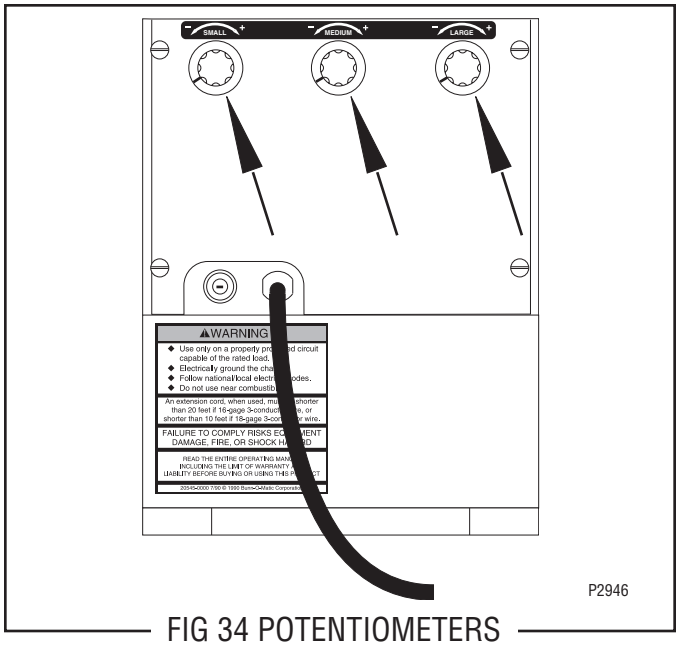


FIG 34 POTENTIOMETERS

Location:

The potentiometer switches are located on the top rear of the hopper housing.

Test Procedure:

1. Disconnect the grinder from the power source.
2. Open hopper lid and loosen four screws inside the hopper and remove hopper.
3. Disconnect the BRN wire from the control board.
4. Disconnect the PNK, GRY, and TAN wires from the front selector switch.
5. Connect an ohmmeter to the BRN wire. Connect the other lead from the meter to the TAN wire. Turn the knob for the SMALL potentiometer all the way counterclockwise. The meter should read <3K ohm. Turn the knob all the way clockwise, the meter should read between 94K and 116K ohms.
6. Connect an ohmmeter to the GRY wire. Connect the other lead from the meter to the TAN wire. Turn the knob for the MEDIUM potentiometer all the way counterclockwise. The meter should read <3K ohm. Turn the knob all the way clockwise, the meter should read between 94K and 116K ohms.
7. Connect an ohmmeter to the TAN wire. Connect the other lead from the meter to the TAN wire. Turn the knob for the LARGE potentiometer all the way counterclockwise. The meter should read between 13.5K and 19.5K ohms. Turn the knob all the way clockwise, the meter should read between 108K and 132K ohms.

If continuity is present at all positions, the potentiometer switches are operating properly.
If continuity is not present at any position, replace the potentiometer switches.

8. Refer to Fig 35 when reconnecting wires.

Removal and Replacement:

1. Disconnect the grinder from the power source.
2. Remove the four 8-32 screws attaching the rear access panel and move aside.
3. Disconnect three wires to the batch selector switch and the one wire to the timer.
4. Loosen the setscrews on the switch knobs and remove the knobs.
5. Remove the three nuts and lockwashers attaching the switches to the rear access panel.
6. Inspect and replace the adhesive backed sponge washers on the rear access panel if necessary.
7. Install the new potentiometer switches and tighten the lockwashers and nuts.
8. Replace the knobs and tighten the setscrews.

9.Refer to Fig. 35 when reconnecting wires.

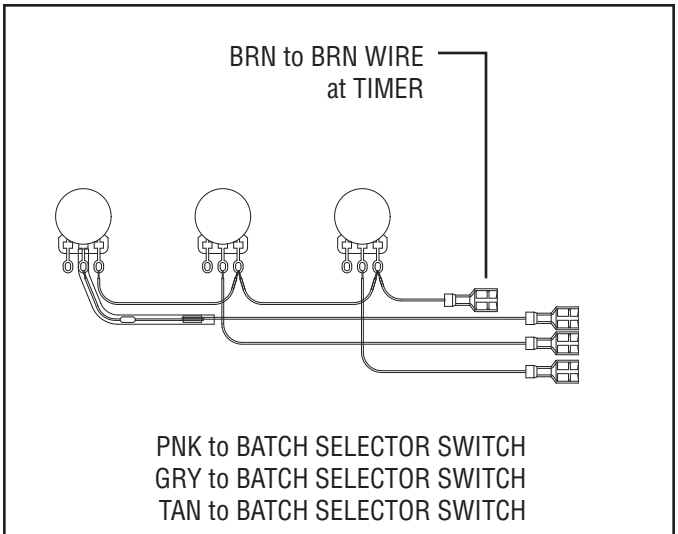
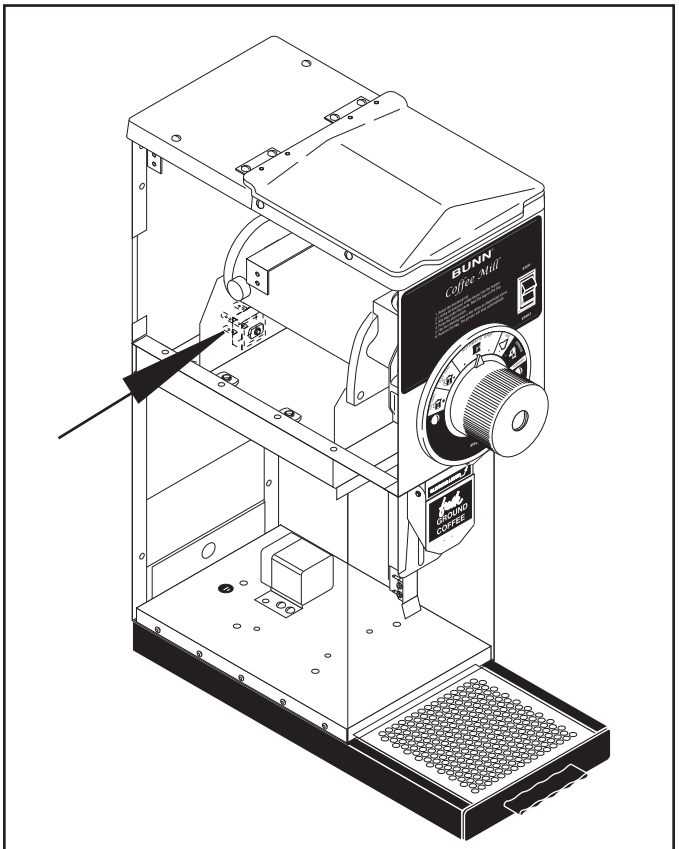


FIG 35 POTENTIOMETER TERMINALS

SERVICE (Cont.)

Rectifier (Models G1 MD, FPG-2 DBC)



P1706

FIG. 36 RECTIFIER

Location:

The rectifier is located inside the grinder housing mounted on the rear of the motor mounting bracket for models G1 MD and on the component mounting bracket for model FPG-2 DBC.

Test Procedures:

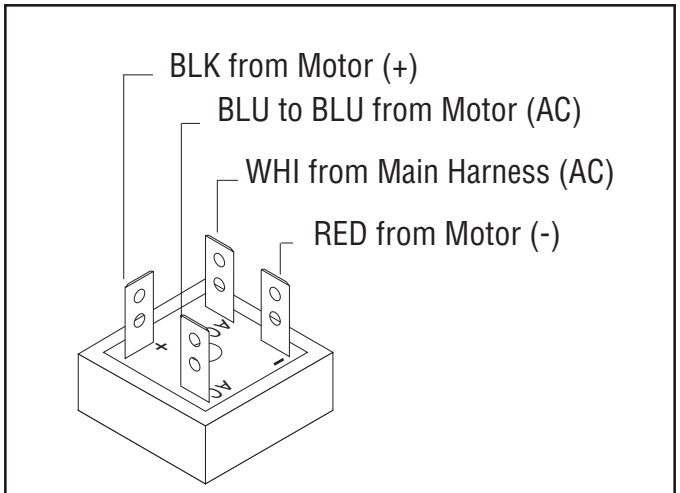
1. Disconnect the grinder from the power source.
2. Remove the red wire and the black wire from the rectifier.
3. Check the voltage across the (+) and (-) terminals on the rectifier with a voltmeter. Connect the grinder to the power source and start the grinder motor. The indication must be approximately 108 volts dc.
4. Disconnect the grinder from the power source.

If voltage is present as described, the rectifier is operating properly.

If voltage is not present as described, refer to the grinder wiring diagram and check the grinder wiring harness.

Removal and Replacement:

1. Disconnect the wires from the rectifier.
2. Remove the #10-32 screw securing the rectifier to the motor mounting bracket.
3. Remove the rectifier and discard.
4. Install new rectifier on the rear of the motor mounting bracket and secure with a #10-32 screw.
5. Refer to Fig. 37 and reconnect the wires.

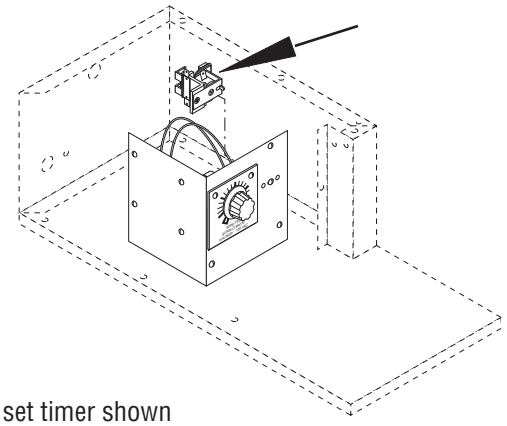


P1381

FIG. 37 RECTIFIER TERMINALS

SERVICE (Cont.)

Relay (Early Model G-9)



Single set timer shown
Multi set timer (Urn/Carafe) similar

P1312

FIG 38 RELAY

Location:

The relay is located on the timer bracket in the grinder base. The bracket can be removed by loosening the two 8-32 screws beneath the timer dial.

Test Procedure:

1. Disconnect the grinder from the power supply.
2. Check the voltage across the white/red and white/green wires of the relay coil with a voltmeter when the Off/On/Start switch is placed in the "START" (right) position and released. Connect grinder to the power supply. The indication must be:
   (a) 120 volts ac for two wire 120 volt models
   (b) 240 volts ac for two wire 240 volt models for the approximate setting on the timer.
3. Disconnect the grinder from the power supply.

If voltage is present as described, reconnect the white/red and white/green wires to the relay coil, and proceed to step 4.

If voltage is not present as described, refer to the Wiring Diagrams and check the grinder wiring harness.

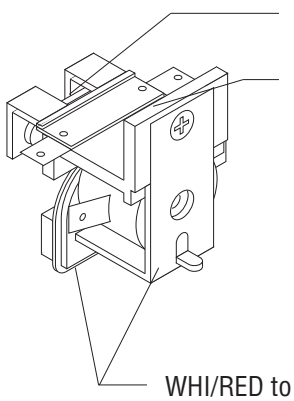
4. Remove the white/red and white/blue wires from the relay contacts.
5. Check for continuity across the relay contacts when the Off/On/Start switch is placed in the "START" (right) position and released. Connect grinder to the power supply. Continuity must be present for the approximate setting on the timer.
6. Disconnect the grinder from the power supply.

If continuity is present as described, reconnect the white/red and white/blue wires, the relay is operating properly.

If continuity is not present as described, replace the relay.

Removal and Replacement

1. Remove all wires from the relay terminals.
2. Remove the 6-32 screw fastening the relay to the timer bracket.
3. Mount the new relay to the timer bracket and tighten the screw.
4. Refer to the illustration below when reconnecting the wires.



P610

FIG 39 RELAY TERMINALS

SERVICE (Cont.)

Relay (Models G1, G2, G3, G2 trifecta)

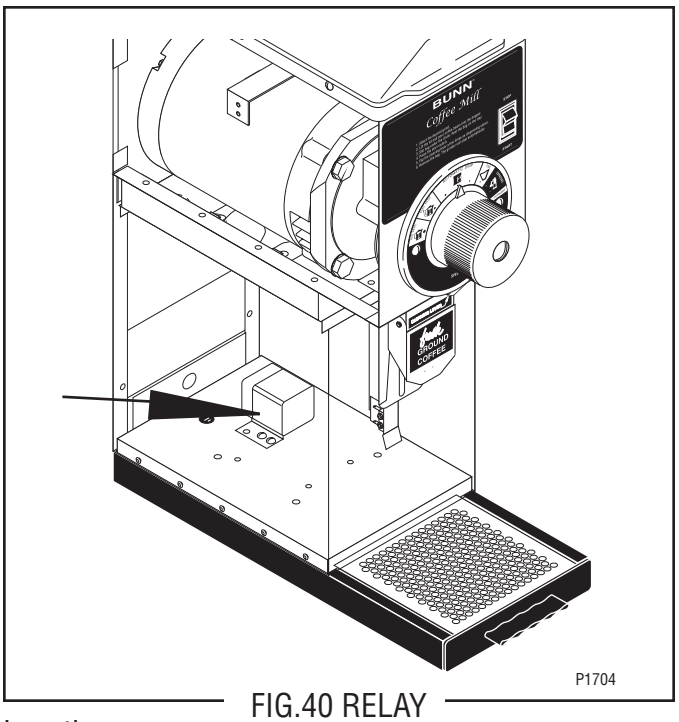


FIG.40 RELAY

Location:

The relay is located on the grinder base inside the lower housing.

Test Procedure:

1. Disconnect the grinder from the power source and place a coffee bag behind the dispense chute.
2. Check the voltage across the white/orange and white or red/black wires on terminals A & B of the relay with a voltmeter. Hold the Off/On/Start switch in the "START" (lower) position and connect the grinder to the power source. The indication must be:
   a. 120 volts ac for two wire 120 volt models.
   b. 230 volts ac for two wire 230 volt models.
   c. 240 volts ac for two wire 240 volt models
3. Disconnect the grinder from the power source.

If voltage is present as described, proceed to #4.
If voltage is not present as described, refer to the Wiring Diagrams and check the grinder wiring harness.

4. Remove the white/red wires from relay contacts 7 & 9.
5. Check the voltage across the white wire or red/black on terminal B and either white/red wire with a voltmeter. Place the Off/On/Start in either the "ON" (center) position or "START" (lower) position. Connect the grinder to the power source. The indication must be:
   a. 120 volts ac for two wire 120 volt models.
   b. 230 volts ac for two wire 230 volt 50 Hz models.
   c. 240 volts ac for two wire 240 volt 60 Hz models.
6. Disconnect the grinder from the power source.
7. Check the voltage across terminal B and the remaining white/red wire with a voltmeter. Place the Off/On/Start switch in either the "ON" (center) position or "START (lower) position. Connect the grinder to the power source. The indication must be:
   a. 120 volts ac for two wire 120 volt models.
   b. 230 volts ac for two wire 230 volt 50 Hz models.
   c. 240 volts ac for two wire 240 volt 60 Hz models.
8. Disconnect the grinder from the power source.

If voltage is present as described, proceed to #9.
If voltage is not present as described, refer to the Wiring Diagrams and check the grinder wiring harness.

9. Remove the white/violet wire from terminal 6 and white/blue wire from terminal 4.
10. Check for continuity across terminals 7 & 4. Connect the grinder to the power source. Continuitymust be present when the Off/On/Start switch is momentarily placed in the "START" (lower) position and a bag is in place behind the coffee dispense chute.
11. Check for continuity across terminals 9 & 6. Connect the grinder to the power source. Continuity must be present when the Off/On/Start switch is momentarily placed in the "START" (lower) position and a bag is in place behind the coffee dispense chute.
12. Disconnect the grinder from the power source.

If continuity is present as described, reconnect the wires, the relay is operating properly.
If continuity is not present as described, replace the relay.

SERVICE (Cont.)

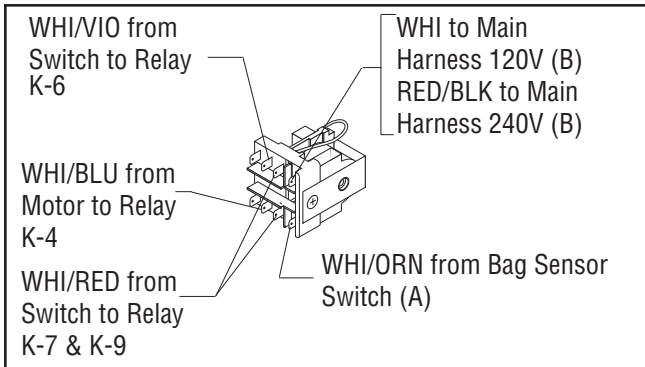
RELAY (cont.)

Removal and Replacement (120 Volt and 240V 60 Hz Models):

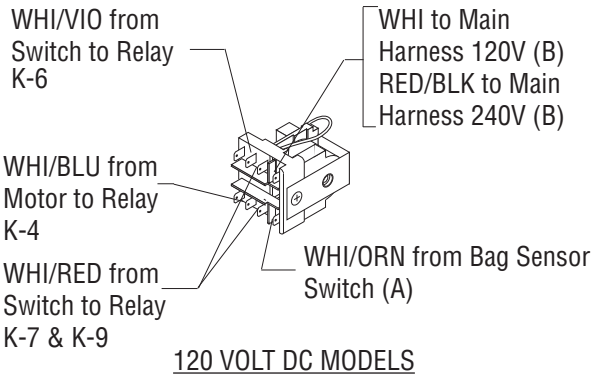
1. Remove the wires from the relay terminals.
2. Remove the two #6-32 screws securing the relay bracket w/relay to the grinder base and remove bracket and relay as an assembly.
3. Remove the #6-32 screw securing the relay to the bracket and remove relay and discard.
4. Install new relay to the mounting bracket using one #6-32 screw,
5. Mount the new relay w/bracket to the grinder base using two #6-32 screws.
6. Refer Fig. 41 when reconnecting the wires.

Removal and Replacement (230 volt 50 Hz Models):

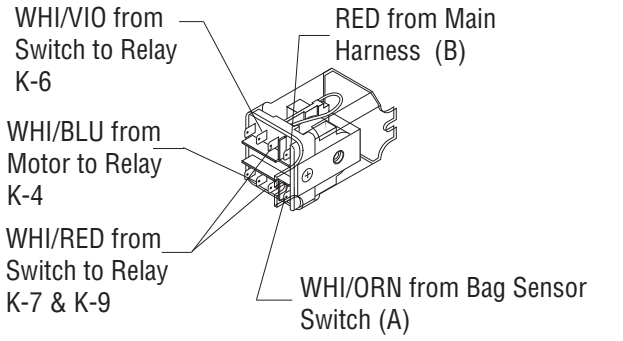
1. Remove the wires from the relay terminals.
2. Remove the two #6-32 screws securing the relay to the grinder base.
3. Remove relay and discard.
4. Install new relay to the grinder base using two #6-32 screw.
5. Refer Fig. 41 when reconnecting the wires.


WHI/VIO from Switch to Relay K-6
WHI to Main Harness 120V (B) RED/BLK to Main Harness 240V (B)
WHI/BLU from Motor to Relay K-4
WHI/RED from Switch to Relay K-7 & K-9
WHI/ORN from Bag Sensor Switch (A)

120V AND 240 VOLT AC MODELS


WHI/VIO from Switch to Relay K-6
WHI to Main Harness 120V (B) RED/BLK to Main Harness 240V (B)
WHI/BLU from Motor to Relay K-4
WHI/RED from Switch to Relay K-7 & K-9
WHI/ORN from Bag Sensor Switch (A)

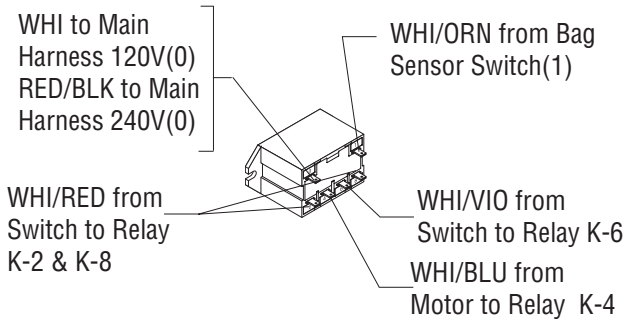
120 VOLT DC MODELS


WHI/VIO from Switch to Relay K-6
RED from Main Harness (B)
WHI/BLU from Motor to Relay K-4
WHI/RED from Switch to Relay K-7 & K-9
WHI/ORN from Bag Sensor Switch (A)

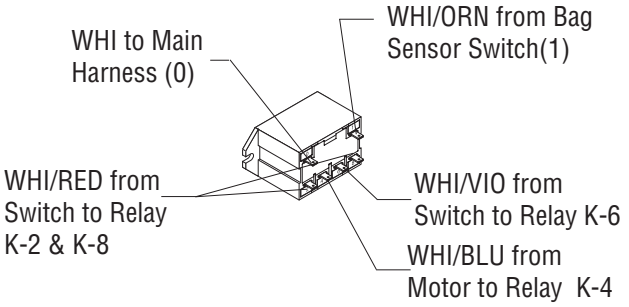
230 VOLT AC 50 Hz MODELS

P1707

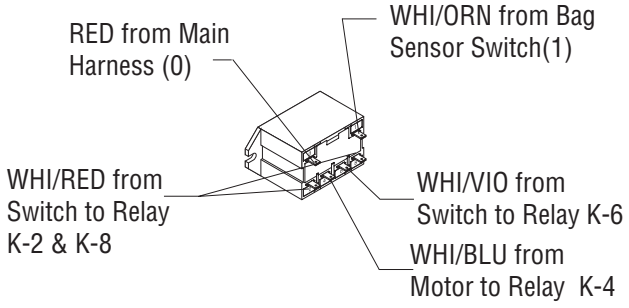
EARLY MODELS


WHI to Main Harness 120V(0) RED/BLK to Main Harness 240V(0)
WHI/ORN from Bag Sensor Switch(1)
WHI/RED from Switch to Relay K-2 & K-8
WHI/VIO from Switch to Relay K-6
WHI/BLU from Motor to Relay K-4

120V AND 240 VOLT AC MODELS


WHI to Main Harness (0)
WHI/ORN from Bag Sensor Switch(1)
WHI/RED from Switch to Relay K-2 & K-8
WHI/VIO from Switch to Relay K-6
WHI/BLU from Motor to Relay K-4

120 VOLT DC MODELS


RED from Main Harness (0)
WHI/ORN from Bag Sensor Switch(1)
WHI/RED from Switch to Relay K-2 & K-8
WHI/VIO from Switch to Relay K-6
WHI/BLU from Motor to Relay K-4

230 VOLT AC 50 Hz MODELS

P3696

LATE MODELS

FIG. 41 RELAY TERMINALS

SERVICE (Cont.)

Relay (Models MHG, FPG-2 DBC, Late Model G-9, G9-2, G9-2 DBC)

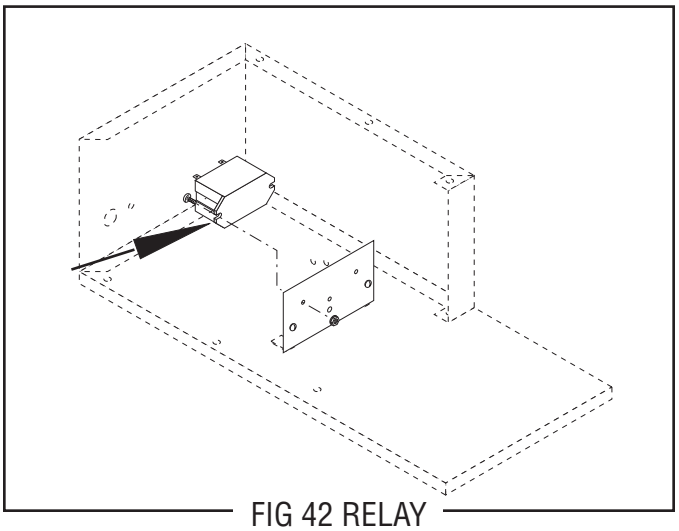


FIG 42 RELAY

Location:
The relay is located either on the timer bracket or on the component mounting bracket in the grinder base. The bracket can be removed by loosening the two 8-32 screws beneath the timer dial.

Test Procedure:
1. Disconnect the grinder from the power supply.
2. Access the relay and remove the wires from all terminals.
3. With an ohmmeter, check for continuity between the 0 and 1 terminals.
4. With an ohmmeter, check that there is an open circuit between terminals 2 and 4, and between terminals 6 and 8.

If continuity is present as described, reconnect the wires, the relay is operating properly.
If continuity is not present as described, replace the relay.

Removal and Replacement
1. Disconnect the grinder from the power supply.
2. Remove all wires from the relay terminals.
3. Remove the two 8-32 screws attaching the relay to the mounting bracket.
4. Refer to Fig 43 when connecting relay wires.

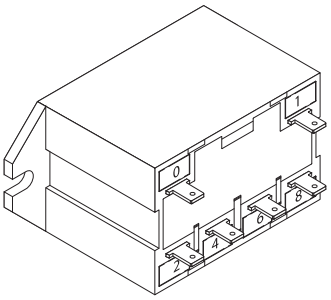


FIG 43 RELAY TERMINALS

SERVICE (Cont.)

Hopper Slide Plates (Models G9-2, G9-2 DBC)

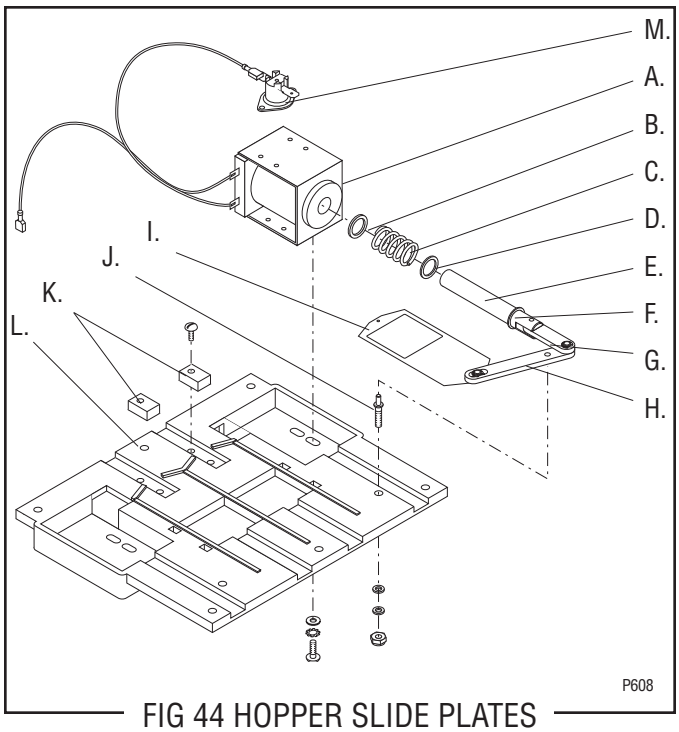


FIG 44 HOPPER SLIDE PLATES

A. Solenoid Coil
B. Fiber Washer
C. Spring
D. Spring Retaining Washer
E. Solenoid Plunger
F. Snap Ring
G. Short Link
H. Long Link
I. Slide Plate
J. Pivot Pin
K. Stop Block
L. Solenoid Mounting Plate
M. Solenoid Limit Thermostat

Location:

The slide plates are located on the solenoid mounting plate immediately beneath the hopper openings.

The slide plates must always remain flat for proper operation.

Test Procedure:

With the solenoid mounting plate attached to the hopper, push the solenoid plunger into the coil. The slide plate must move freely in the assembly and snap closed when the plunger is released. Repeat for the other slide plate.

If the slide plates move as described, they are operating correctly.

If the slide plates do not move as described, the problem may be in any one or more of the linkage pieces, springs, slide plates, and/or the solenoid mounting plate. Disassemble the solenoid mounting plate assembly and inspect all components for free movement.

Replace if excessively worn or damaged.

Removal and Replacement:

1. Remove the hopper from the grinder.
2. Remove six slotted head screws holding the solenoid mounting panel to the hopper.
3. The slide plate with attached linkage can be lifted off the pivot pin and removed with the solenoid plunger.
4. Refer to the illustration above when reassembling the components.
5. **Inspect the slide plates after reassembly. They must move freely.**

SERVICE (Cont.)

Hopper Slide Plates (Models MHG)

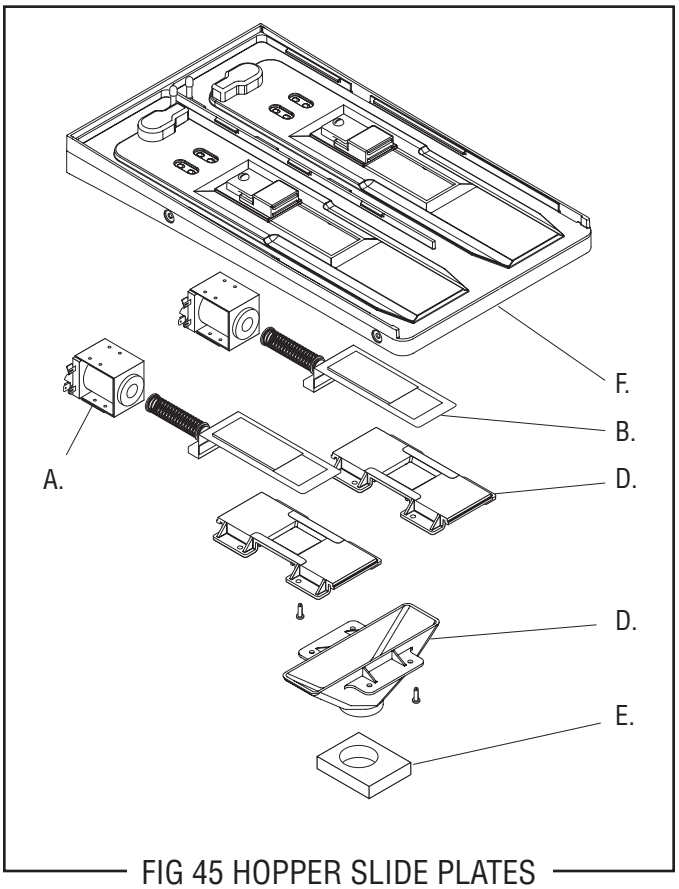


FIG 45 HOPPER SLIDE PLATES

A. Solenoid Coil
B. Slide Gate
C. Slide Gate Support
D. Collector
E. Collector Seal
F. Solenoid Mounting Plate

Location:

The slide plates are located on the solenoid mounting plate immediately beneath the hopper openings.

The slide plates must always remain flat for proper operation.

Test Procedure:

With the solenoid mounting plate attached to the hopper, push the solenoid plunger into the coil. The slide plate must move freely in the assembly and snap closed when the plunger is released. Repeat for the other slide plate.

If the slide plates move as described, they are operating correctly.

If the slide plates do not move as described, the problem may be in any one or more of the linkage pieces, springs, slide plates, and/or the solenoid mounting plate. Disassemble the solenoid mounting plate assembly and inspect all components for free movement.

Replace if excessively worn or damaged.

Removal and Replacement:

1. Remove the hopper from the grinder.
2. Remove six slotted head screws holding the solenoid mounting panel to the hopper.
3. The slide plate with attached linkage can be lifted off the pivot pin and removed with the solenoid plunger.
4. Refer to the illustration above when reassembling the components.
5. **Inspect the slide plates after reassembly. They must move freely.**

SERVICE (Cont.)

Solenoids (Models MHG, FPG-2 DBC, LPG-2, G9-2, G9-2 DBC)

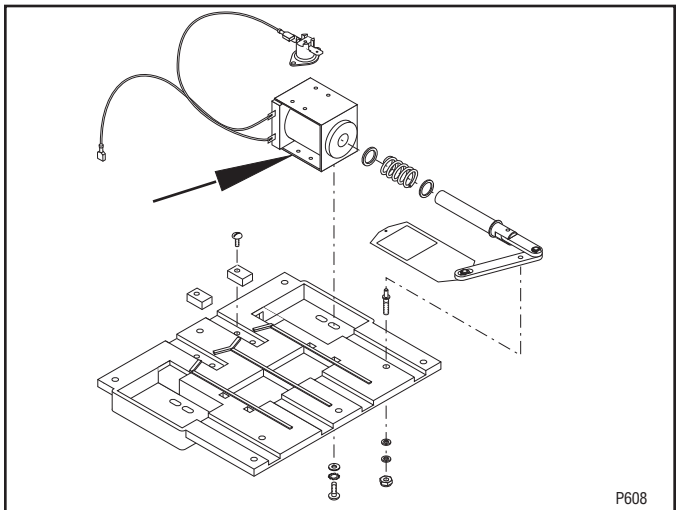


FIG 46 SOLENOIDS

Location:

The solenoids are located on the mounting plate immediately beneath the hoppers.

Test Procedure:

1. Unplug the grinder.
2. Connect a voltmeter across the left or right solenoid coil terminals. Plug-in the grinder. Momentarily press the Off/On/Start switch to "START" (lower) position and release (hopper selector switch must be corresponding to the suspect solenoid). The indication must be 120 volts ac for 120V models and 230 volts ac for 230V models.
3. Unplug the grinder.

If voltage is present as described, proceed to #4.
If voltage is not present as described, refer to the *Wiring Diagram* and check the grinder wiring harness.

4. Separate the connectors on the white/brown wires of the solenoids from the connectors on the grinder wiring harness (RED/BLK) and the limit thermostat.
5. Check for continuity across the white/brown wires on the suspect solenoid coil.

If continuity is present as described, reconnect the white/brown wires to the grinder wiring harness, and proceed to #6.
If continuity is not present as described, replace the solenoid.

6. Check for continuity across the terminals of the limit thermostat.

If continuity is present as described, reconnect the wires, and proceed to #7.
If continuity is not present as described, replace the limit thermostat.

7. Check the solenoid for coil action when the control switch is momentarily pressed to the "START" (lower) position and released. Plug-in the grinder. Listen carefully in the vicinity of the solenoid for a "clicking" sound as the coil magnet attracts and after a period of time, repels the plunger.
8. Unplug the grinder.

If the sound is heard as described and the plunger remains unable to move or move freely, refer to the slide plate section.
If the sound is not heard as described, replace the solenoid.

Removal and Replacement:

1. Remove the hopper assy from the grinder.
2. Remove the four 8-32 slotted-head screws holding the solenoid coil to the solenoid panel.
3. Feed the white/brown wires through the hole in the solenoid mounting plate and loosely install the new solenoid coil.
4. Look through the collector on the bottom of the assy and adjust the slide plate travel distance when installing the solenoid coil.
5. Push the solenoid plunger into the solenoid coil with your hand while moving the coil forward or backward in its mounting holes.
6. Securely tighten the mounting screws when the slide plate appears to have no metal showing in the front or back of the hopper hole.
7. Refer to the following illustration when reconnecting the wires.

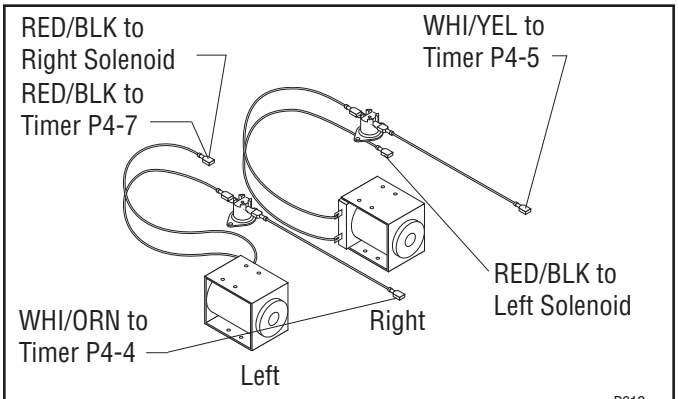


FIG 47 SOLENOID TERMINALS

SERVICE (Cont.)

Timer (Model LPG-2E)

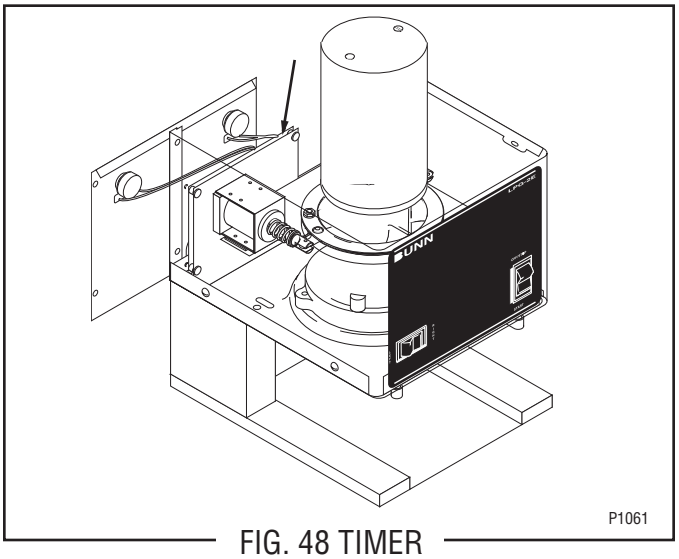


FIG. 48 TIMER

Location:

The timer is located inside the hopper housing just behind the left solenoid.

Test Procedure:

1. Disconnect grinder from the power source.
2. Insert the leads of a voltmeter set to read at least 120 volts AC, along side the red wire (terminal 8) and the white wire (terminal 2) of the harness plug. Place the Off/On/Start switch in the "ON" center position. Connect the grinder to the power source. The indication must be 120 volts AC.
3. Disconnect the grinder from the power source.

If voltage is present as described, proceed to step #4.
If voltage is not present as described, refer to the wiring diagram and check the grinder wiring harness.

4. Place the hopper selector switch in the left position.
5. Insert the leads of a voltmeter set to read at least 120 volts AC, along side the red wire (terminal 8) and the orange wire (terminal 10) of the harness plug. Place the Off/On/Start switch in the "START" lower position. Connect the grinder to the power source. The indication must be 120 volts AC for the set gate time and return to 0 volts.
6. Disconnect the grinder from the power source.

If voltage is present as described, proceed to step #7.
If voltage is not present as described, replace the timer.

7. Place the hopper selector switch in the right position.
8. Insert the leads of a voltmeter set to read at least 120 volts AC, along side the red wire (terminal 8) and the violet wire (terminal 9) of the harness plug. Place the Off/On/Start switch in the "START" lower position. Connect the grinder to the power source. The indication must be 120 volts AC for the set gate time and return to 0 volts.
9. Disconnect the grinder from the power source.

If voltage is present as described, proceed to step#10.
If voltage is not present as described, replace the timer.

10. Insert the positive (+) lead of a volt meter set to read at least 120 volts DC, along side the black wire (terminal 7) of the harness plug and insert the negative (-) lead along side the white/black wire (terminal 6) of the harness plug. Place the Off/On/Start switch in the "START" lower position. Connect the grinder to the power source. The indication must be 120 volts DC for the set gate time plus clean out time and return to 0 volts.

If voltage is present as described the timer is operating properly.
If Voltage is not present as described, replace the timer.

Removal and Replacement:

1. Disconnect the main wiring harness plug from the terminal block on the timer.
2. Remove the two timer dial knobs located on the rear panel of the grinder.
3. Remove nut and internal tooth lockwasher securing dials to the rear panel.
4. Loosen the two #8-32 pan head screws securing the timer and timer mounting bracket to the motor support plate.

SERVICE (Cont.)

Timer (Model LPG-2E)

5. Remove timer and timer mounting bracket from the grinder.
6. Remove the four #6-32 keps nuts securing the timer to the mounting bracket. Leave the four spacers on the mounting bracket studs.
7. Place new timer over the studs on the mounting bracket and secure with four #6-32 keps nuts.
8. Slip timer and timer mounting bracket under the two screws on the motor support plate and tighten screws.
9. Locate the left and right timer dials in their proper place on the rear panel and secure with nuts and internal tooth lockwashers.
10. Place timer knobs on timers.
11. Reconnect harness plug to the terminal block on the timer board.

Timer (Models LPG, FPG)

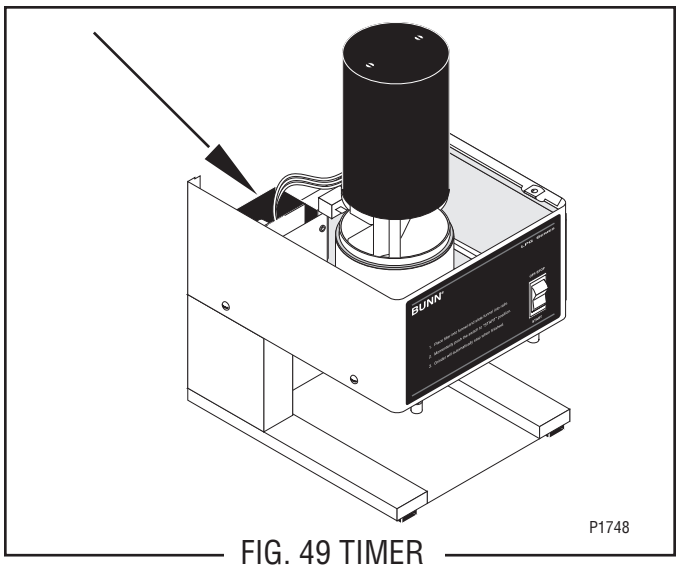


FIG. 49 TIMER

Location:

The timer is located inside the rear access panel. Adjustments can be made by removing the 2" hole plug.

Test Procedure:

1. Disconnect grinder from the power source.
2. Insert the leads of a voltmeter set to read at least 120 volts AC, along side the red wire (terminal 1) and the white/black wire (terminal 2) of the harness plug. Place the Off/On/Start switch in the "ON" center position. Connect the grinder to the power source. The indication must be 120 volts AC for 120 volt models, 100 volts for 100 volt models, and 230 volts for 230 volt models.
3. Disconnect the grinder from the power source.

If voltage is present as described, proceed to step #4.

If voltage is not present as described, refer to the wiring diagram and check the grinder wiring harness.

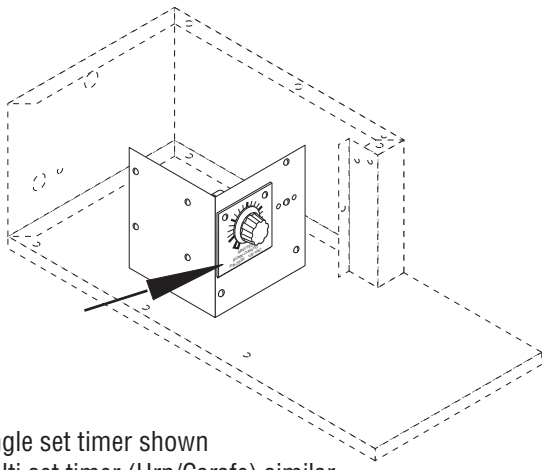
4. Insert the positive (+) lead of a volt meter set to read at least 120 volts DC (157 volts DC on units with capacitor), along side the black wire (terminal 3) of the harness plug and insert the negative (-) lead along side the white wire (terminal 6) of the harness plug. Place the Off/On/Start switch in the "START" lower position. Connect the grinder to the power source. The indication must be 120 volts DC for 120 volt models (157 volts DC on units with capacitor), 100 volts for 100 volt models, and 230 volts for 230 volt models for the set time and return to 0 volts.
5. Disconnect the grinder from the power source.

If voltage is present as described the timer is operating properly.

If Voltage is not present as described, replace the timer.

SERVICE (Cont.)

Timer (Model G9)



Single set timer shown
Multi set timer (Urn/Carafe) similar

P1312

FIG 50 TIMER

Location:

The timer is located on the timer bracket in the grinder base. The bracket can be removed by loosening the two 8-32 screws beneath the timer dial(s).

Test Procedure:

1. Disconnect the grinder from the power supply.
2. Check the voltage across terminals TL1 & TL2 with a voltmeter when the "Off/On/Start switch is placed in the "START" (right) position and released. Connect grinder to the power supply. The indication must be:
   (a) 120 volts ac for two wire 120 volt models.
   (b) 240 volts ac for two wire 240 volt models.
3. Disconnect the grinder from the power supply.

If voltage is present as described, proceed to step 4.
If voltage is not present as described, refer to the Wiring Diagram and check the grinder wiring harness.

4. Remove the white/orange and white/yellow wires from terminals TL3 & TL5.
5. Check for continuity across the white/orange and white/yellow wires when the Off/On/Start switch is placed in the "START" (right) position.

If continuity is present as described, reconnect the white/orange wire to terminal TL3 and the white/yellow wire to terminal TL5, and proceed to step 6.
If continuity is not present as described, refer to the Wiring Diagram and check the grinder wiring harness.

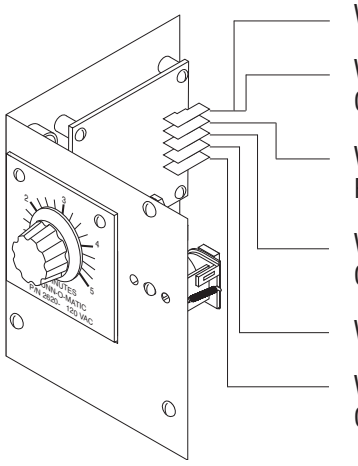
6. Check the voltage across terminals TL1 and TL4 with a voltmeter when the Off/On/Start switch is placed in the "START" (right) position and released. Connect grinder to the power supply. The indication must be:
   (a) 120 volts ac for two wire 120 volt models.
   (b) 240 volts ac for two wire 240 volt models.

7. Disconnect the grinder from the power supply.

If voltage is present as described, the timer is operating properly. Refer to the Adjustments section to vary the amount dispensed.
If voltage is not present as described, replace the timer.

Removal and Replacement:

1. Remove all wires from the timer terminals.
2. Remove the four 6-32 screws and nuts holding the circuit board to the timer bracket.
3. Remove the two 6-32 screws and nuts holding the dial plate to the timer bracket.
4. Install the new dial plate and circuit board to the timer bracket.
5. Refer to the illustration below when reconnecting the wires.
6. Refer to the Adjustments section to vary the amount dispensed.



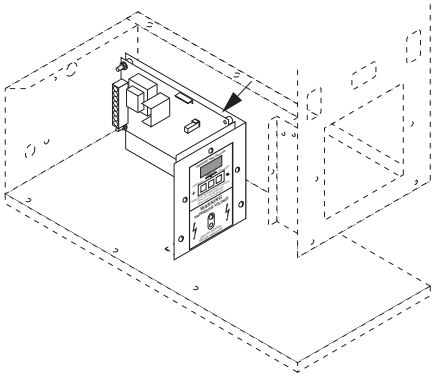
Single set timer shown
Multi set timer (Urn/Carafe) connections are the same

P1313

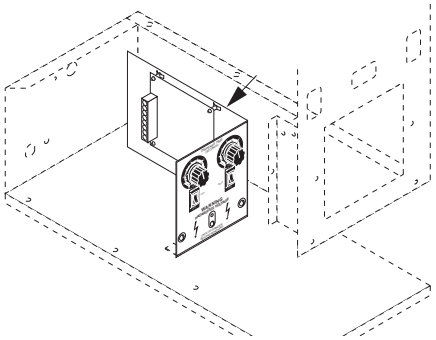
FIG 51 TIMER TERMINALS

SERVICE (Cont.)

Timer (Model G9-2)



Digital Timer



Analog Timer

P613

FIG 52 TIMER

Location:

The timer is located in the grinder base.

Test Procedure:

1. Unplug the grinder.
2. Connect a voltmeter across contacts 1 & 2 of the larger connector (P4) on the timer board. Plug-in the grinder. The indication must be 120 volts ac for 120V models and 230 volts ac for 230V models.
3. Unplug the grinder.
4. Connect a voltmeter across contacts 2 & 6 of the larger connector (P4) on the timer board. Plug-in the grinder. When the control switch is in any position except "OFF" (center), the indication must be 120 volts ac for 120V models and 230 volts ac for 230V models.
5. Unplug the grinder.

If voltage is present as described, proceed to #6.
If voltage is not present as described, refer to the *Wiring Diagram* and check the grinder wiring harness.

6. Connect a voltmeter across contacts 3 & 7 of the larger connector (P4) on the timer board. Plug-in the grinder. Momentarily press the Off/On/Start switch to "START" (lower) position and release. The indication must be 120 volts ac for 120V models and 230 volts ac for 230V models.
7. Unplug the grinder.

If voltage is present as described, proceed to #8.
If voltage is not present as described, replace the timer.

8. Connect a voltmeter across contacts 4 & 7 of the larger connector (P4) on the timer board. Plug-in the grinder. Place the hopper selector switch to the left position. Momentarily press the Off/On/Start switch to the "START" (lower) position and release. The indication must be 120 volts ac for 120V models and 230 volts ac for 230V models and should remain for the approximate timer setting.
9. Unplug the grinder.

If voltage is present as described, proceed to #10.
If voltage is not present as described, replace the timer.

10. Connect a voltmeter across contacts 5 & 7 of the larger connector (P4) on the timer board. Plug-in the grinder. Place the hopper selector switch to the right position. Momentarily press the Off/On/Start switch to the "START" (lower) position and release. The indication must be 120 volts ac for 120V models and 230 volts ac for 230V models and should remain for the approximate timer setting.
11. Unplug the grinder.

If voltage is present as described, the timer is operating properly.
If voltage is not present as described, replace the timer.

Removal and Replacement:

1. Separate the grinder wiring harness connectors from the timer circuit board.
2. Remove the relay from the timer bracket.
3. Attach the relay to the new timer bracket.
4. Refer to the following illustration when reattaching the connectors.
5. Refer to the *Adjustments* section to reset the volume dispensed.

SERVICE (Cont.)

Control Board (Model MHG)

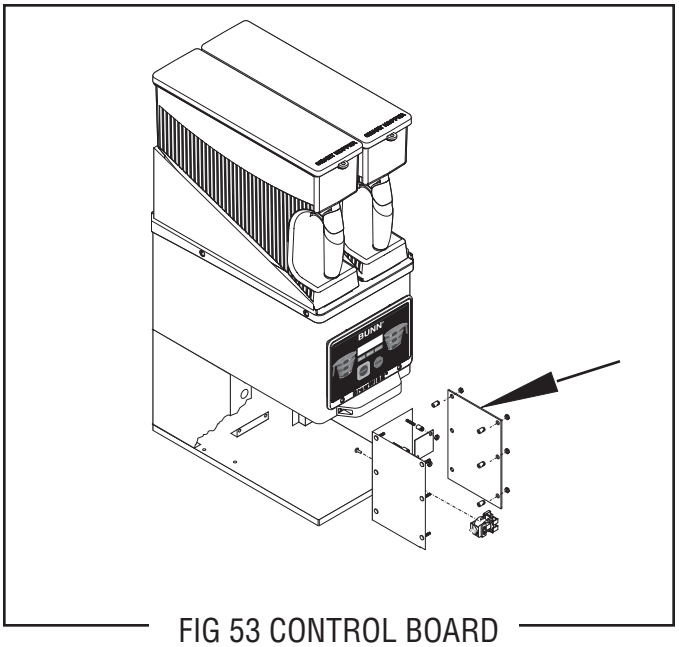


FIG 53 CONTROL BOARD

Location:

The control board is located on the component mounting bracket mounted to the grinder base inside the front access panel. The bracket can be removed by loosening the two 8-32 screws securing the bracket to the grinder base.

Test Procedure:

1. Press and hold the upper right hidden button to enter the Programming menus.
2. Scroll to SERVICE TOOLS menu, and press the button under "YES".
3. Press "YES" under TEST OUTPUTS and proceed,through the menus to test the left and right gates, and the grinder motor.
4. Then scroll to the TEST FREQUENCY menu and press the button under "YES".
5. Observe the left, right and center frequency screens, they should read between 124.0 and 126.0 khz.
6. Should any of the outputs or frequency tests fail, first check the continuity of the wiring between the component and the control board. Then test the individual component before replacing the control board.

Removal and Replacement

1. Disconnect the grinder from the power supply.
2. Remove the front access panel.
3. Remove all wires from the control board terminals.
4. Remove the bracket and control board by removing the two 8-32 screws securing the bracket to the grinder base.
5. Remove the six 8-32 screws attaching the control board the the component bracket.
6. Remove the six spacers from the old control board and discard the control board.
7. Install the six spacers to the new control board
8. Attach the control board to the component bracket using the six screws previously removed.
9. Position the bracket and control board assembly in the grinder base and secure with the two 8-32 screws.
10. Reconnect the wires to the control board.

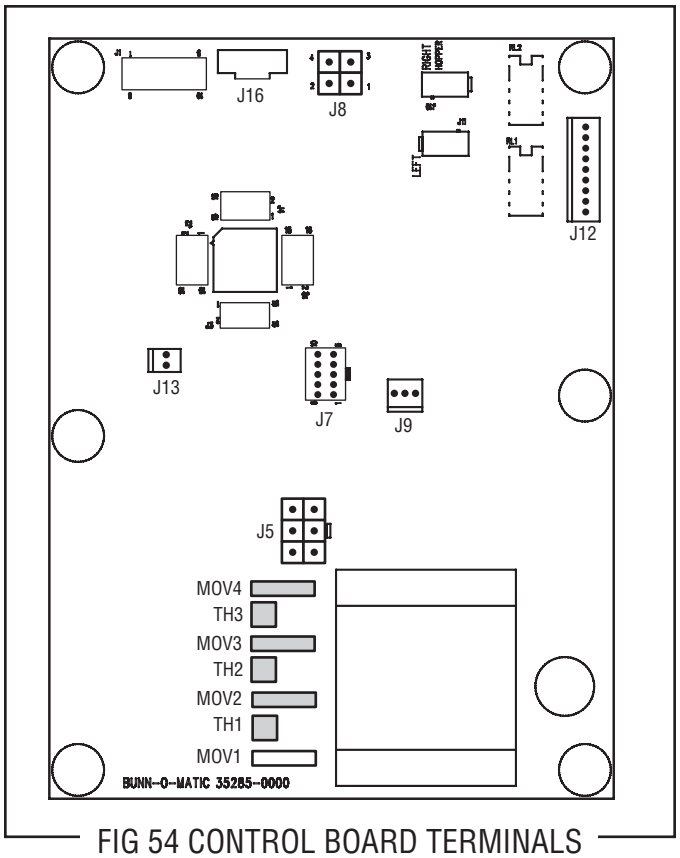


FIG 54 CONTROL BOARD TERMINALS

SERVICE (Cont.)

Control Board (Models FPG-2 & G9-2 DBC)

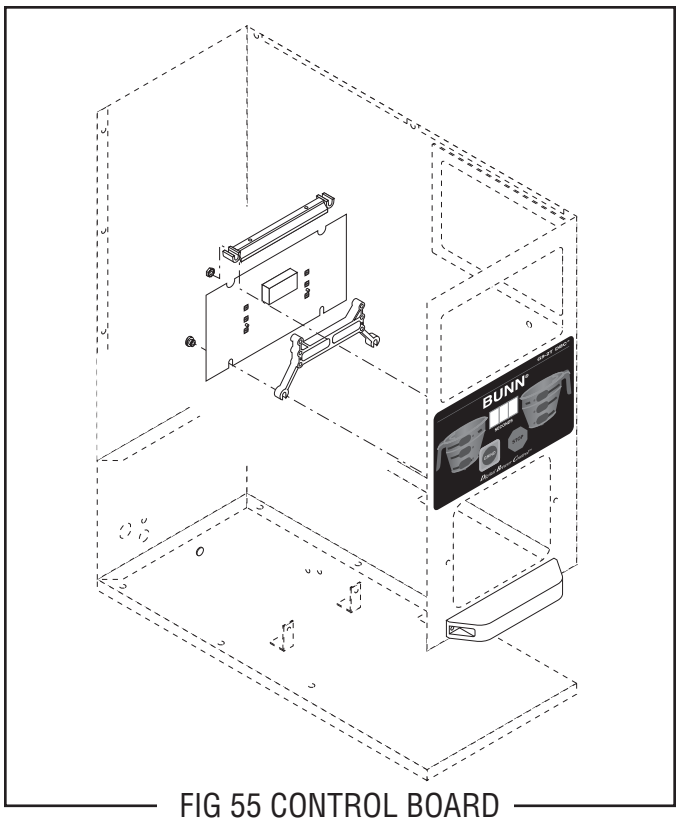


FIG 55 CONTROL BOARD

Location:

The control board is located inside the hopper housing behind the membrane switch.

Test Procedure:

1. Check the continuity of the wiring between the component and the control board.
2. Test the individual components before replacing the control board.

Removal and Replacement

1. Disconnect the grinder from the power supply.
2. Remove the rear access panel.
3. Disconnect all harness plugs from the control board.
4. Remove the two knurled nuts from the bottom of the control board and remove the control board.
5. Refer to Fig 56 when connecting wires.

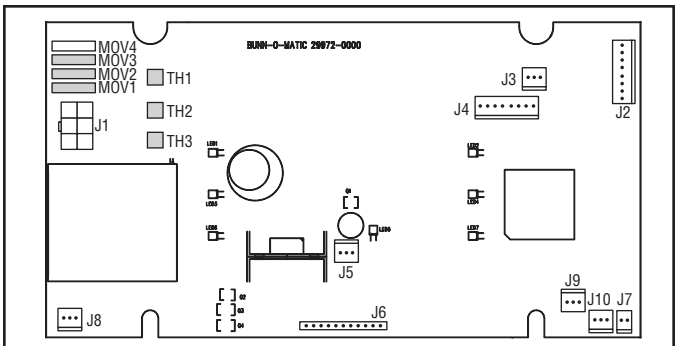


FIG 56 CONTROL BOARD TERMINALS

SERVICE (Cont.)

Membrane Switches (Model MHG only)

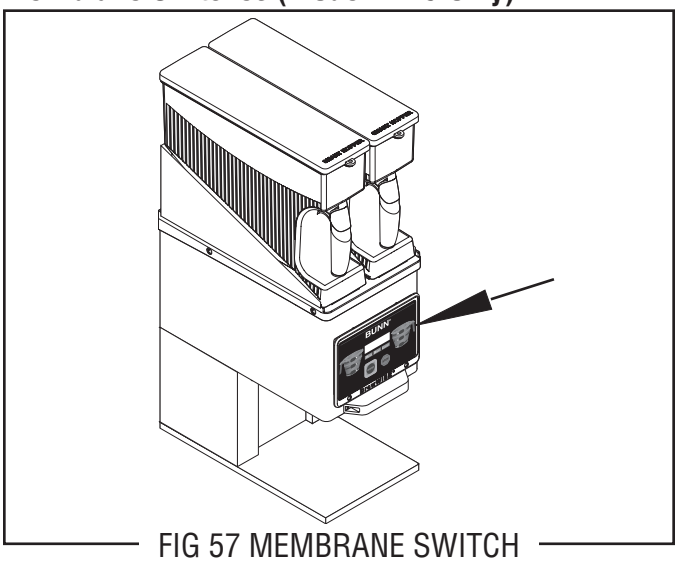
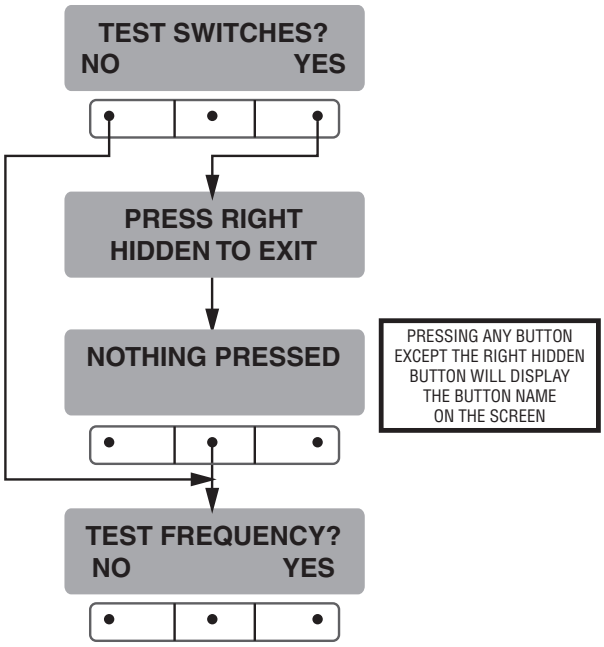


FIG 57 MEMBRANE SWITCH

Location:
The membrane switch is located on the front of the hopper housing.

Test Procedure:
1. Press and hold the right hidden button to enter programming.
2. Scroll through the menus to Service Tools and select YES.
3. Select YES at Test Outputs and scroll through to Test Switches by pressing NEXT.
4. Follow the chart below to test all switches.

If any of the switches indicate a fault, replace the membrane switch.


TEST SWITCHES?
NO YES
PRESS RIGHT HIDDEN TO EXIT
NOTHING PRESSED
PRESSING ANY BUTTON EXCEPT THE RIGHT HIDDEN BUTTON WILL DISPLAY THE BUTTON NAME ON THE SCREEN
TEST FREQUENCY?
NO YES

Removal and Replacement
1. Disconnect the grinder from the power supply.
2. Remove the rear access panel.
3. Disconnect the membrane switch harness from the control board.
4. Carefully peel the membrane switch from the front of the switch bezel.
5. Remove any excess adhesive from the bezel surface.
6. Remove the backing from the new membrane switch.
7. Feed the membrane switch harness through the openning and apply the new membrane switch to the switch bezel.
8. Connect the switch harness to J9 on the display board.

SERVICE (Cont.)

Membrane Switches (Models FPG-2 & G9-2 DBC)

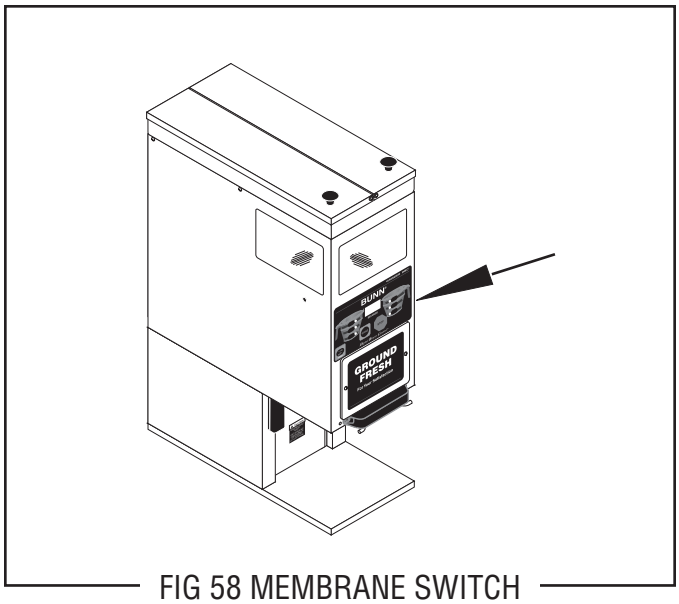


FIG 58 MEMBRANE SWITCH

Location:
The membrane switch is located on the front of the hopper housing.

Test Procedures:
NOTE: Before continuing, check that the ribbon cable is properly connected to the control board and not a pin off in either direction.
1. Disconnect the dispenser from the power source.
2. Remove the rear panel and disconnect ribbon cable.
3. Check for continuity of the switches using pin #1as common.

A1 - #5 Grind
A2 - #6 Stop
B2 - #10 Hidden Button "Right"
C1 - #2 Large Batch Size "Left"
C2 - #3 Medium Batch Size "Left"
C3 - #4 Small Batch Size "Left"
C4 - #9 Large Batch Size "Left"
C5 - #8 Medium Batch Size "Left"
C6 - #7 Small Batch Size "Left"
- #1 Nuetral

If continuity is not present when the appropriate switch is pressed, the Membrane Switch must be replaced. If continuity is present, chech the short harness going to J6 on the Control Board.

Removal and Replacement
1. Disconnect the grinder from the power supply.
2. Remove the rear access panel.
3. Disconnect the membrane switch harness from the control board.
4. Carefully peel the membrane switch from the front of the switch bezel.
5. Remove any excess adhesive from the bezel surface.
6. Remove the backing from the new membrane switch.
7. Feed the membrane switch harness through the openning and apply the new membrane switch to the switch bezel.
8. Connect the switch harness to the control board.

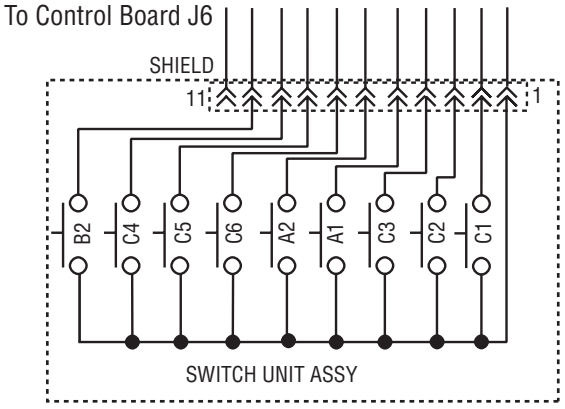


FIG 59 MEMBRANE SWITCH

SERVICE (Cont.)

EMI Filter (Models FPG & FPG-2)

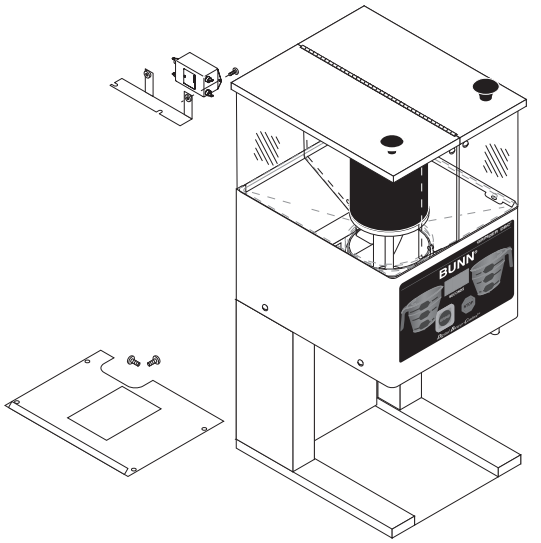


FIG 60 EMI FILTER

Location:

The EMI Filter is located inside the rear cover of the grinder housing.

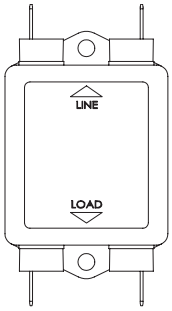
Test Procedure:

1. Disconnect the dispenser from the power source.
2. Disconnect the two red wires and two white wires on the EMI Filter from the EMI Filter wiring harness.
3. Check for resistance between the two red leads on the EMI Filter. (Fig 61)

If resistance is present as described the EMI Filter is operating properly.
If resistance is not present as described, replace the EMI Filter.

Removal and Replacement:

1. Disconnect the wires from the EMI Filter.
2. Remove the two screws securing the EMI Filter.
3. Remove and discard EMI Filter.
4. Install new EMI Filter using two screws to secure EMI Filter to its former location.
5. Refer to schematic when reconnecting the wires.



118.0 kΩ - 118.5 kΩ
Across either pair

FIG 61 EMI FILTER TERMINALS

SERVICE (Cont.)

Funnel Sensing Coil (Models MHG & G9-2 DBC)

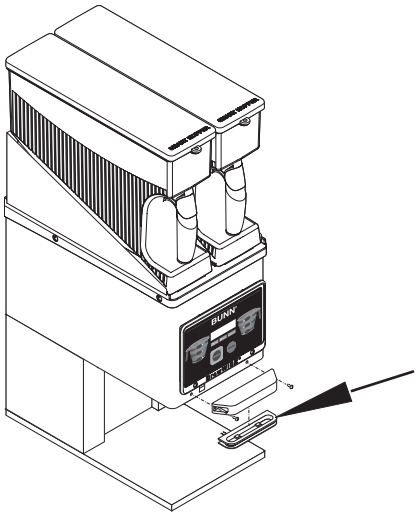


FIG 62 FUNNEL SENSING COIL

Location:
The funnel sensing coil is located inside of the coil cover.

Test Procedure:
1. Disconnect the grinder from the power supply.
2. Remove the two 6-32 screws attaching the coil cover to the front of the grinder housing.
3. Pull slightly away from the housing and disconnect the two wires from the coil.
4. With an ohmmeter, measure the resistance across the pin terminals of the coil. The reading should be 5 to 7 ohms.

If this amount of resistance is not present, replace the funnel sensing coil.

Removal and Replacement
1. Disconnect the grinder from the power supply.
2. Remove the two 6-32 screws attaching the coil cover to the grinder housing.
3. Pull slightly away from the housing and disconnect the two wires from the coil.
3. Remove the coil from the coil cover.
4. Place the new coil into the coil cover and attach the two wires previously removed.
5. Secure cover with two 6-32 screws.

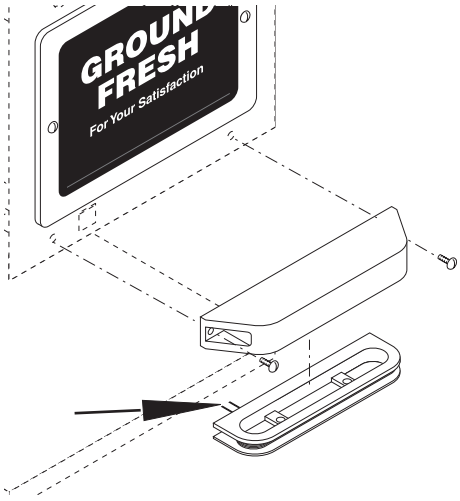


FIG 63 FUNNEL SENSING COIL TERMINALS

SERVICE (Cont.)

Memory Clock Board (Model MHG)

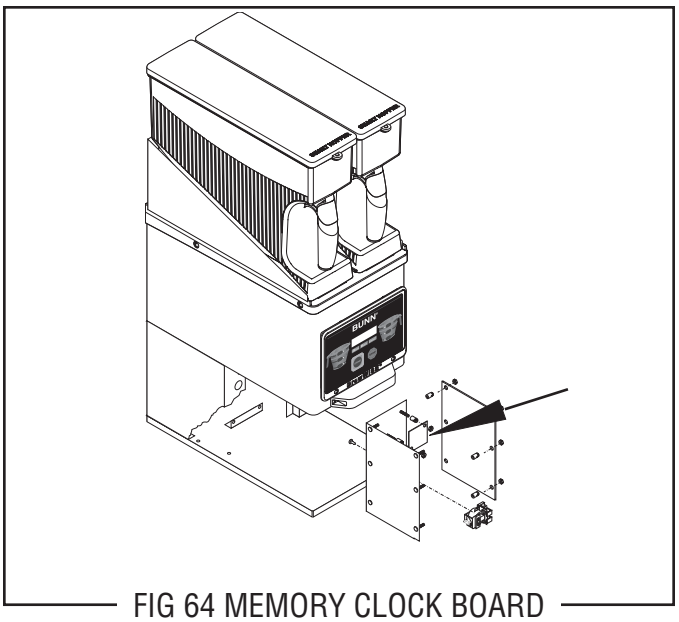


FIG 64 MEMORY CLOCK BOARD

Location:
The memory clock board is located on the component mounting bracket mounted to the grinder base inside the front access panel.

Test Procedure:
1. Disconnect the grinder from the power supply.
2. Disconnect the wiring harness on the memory board.
3. Check for 5VDC on J1-4 and J1-5.

If voltage is not present as described the memory board is operating properly.
If voltage is present as described, replace the memory board.

Removal and Replacement
1. Disconnect the grinder from the power supply.
2. Remove the front access panel.
3. Remove the two 8-32 screws securing the component bracket to the grinder base and tilt forward to gain access to the memory clock board.
5. Disconnect the harness from the memory clock board.
6. Remove the two 6-32 nuts attaching the memory clock board to the component bracket.
7. Remove the two spacers from the old board and attach to the new board.
8. Install new memory board using two #6-32 nuts to secure board to the component bracket.
9. Refer to Fig. 65 when reconnecting the wires.

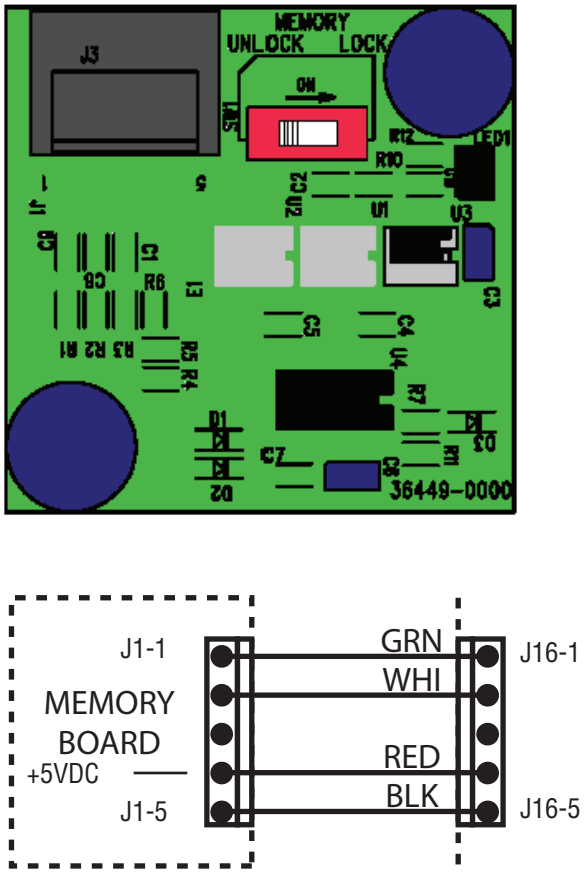


FIG. 65 MEMORY CLOCK BOARD CONNECTORS

SERVICE (Cont.)

Display Board (Model MHG)

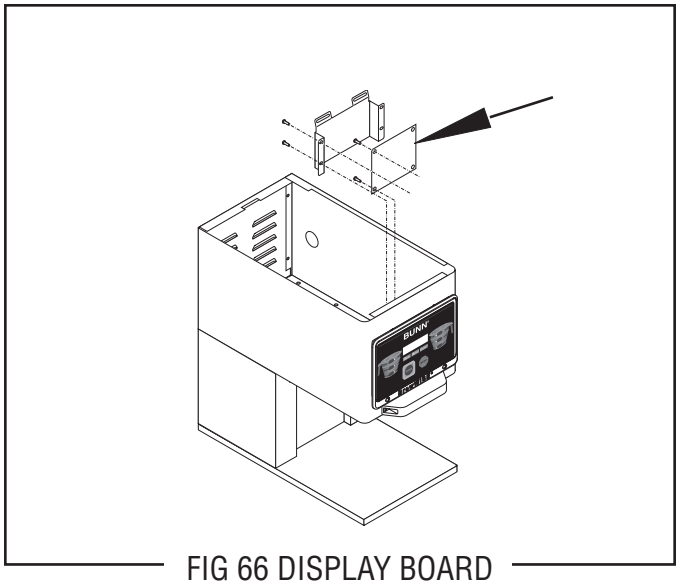


FIG 66 DISPLAY BOARD

Location:

The display board is located inside the hopper housing behind the membrane switch.

Test Procedure:

1. Press and hold the upper right hidden button to enter the Programming menus.
2. Scroll to SERVICE TOOLS menu, and press the button under "YES".
3. Press "YES" under TEST OUTPUTS and proceed, through the menus to test the left and right gates, and the grinder motor.
4. Then scroll to the TEST SWICHES menu and press the button under "YES". Test each button on the conttrol panel, the button pressed will be displayed on the screen.

Removal and Replacement

1. Disconnect the grinder from the power supply.
2. Remove the two 6-32 screws attaching the membrane switch bezel to the hopper housing.
3. Tilt the bezel assembly forward.
4. Remove the four 8-32 screws attaching the board cover bracket to the switch bezel and remove the bracket.
5. Disconnect the wiring harness from the display board.
6. Remove the four 8-32 screws attaching the display board to the switch bezel and remove the board.

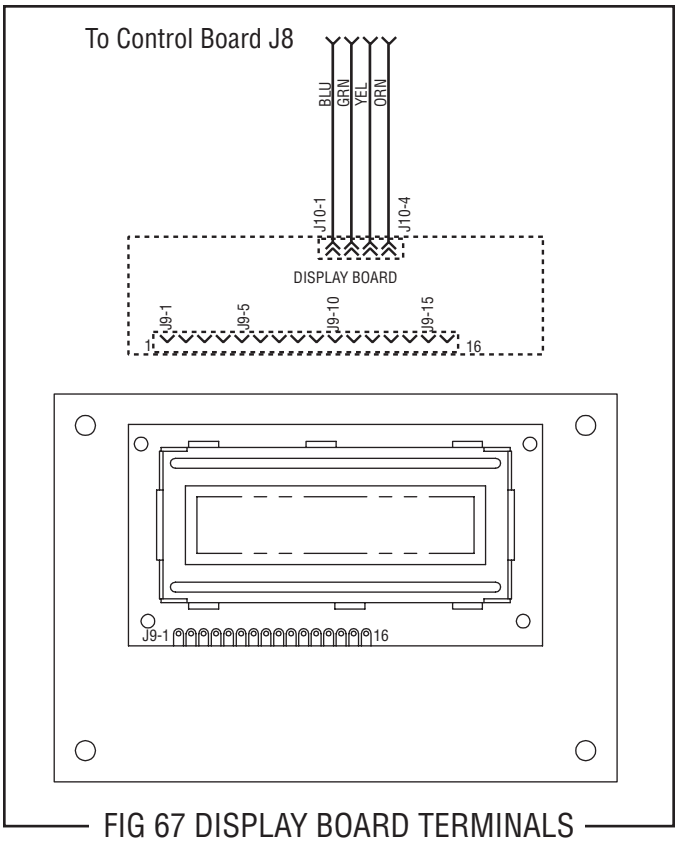
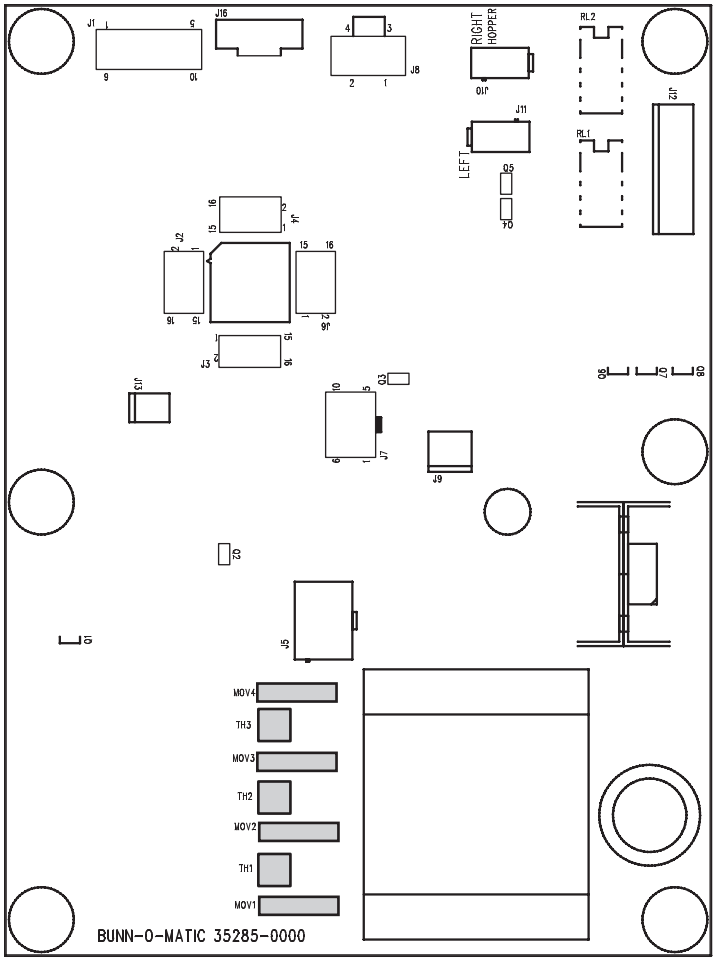


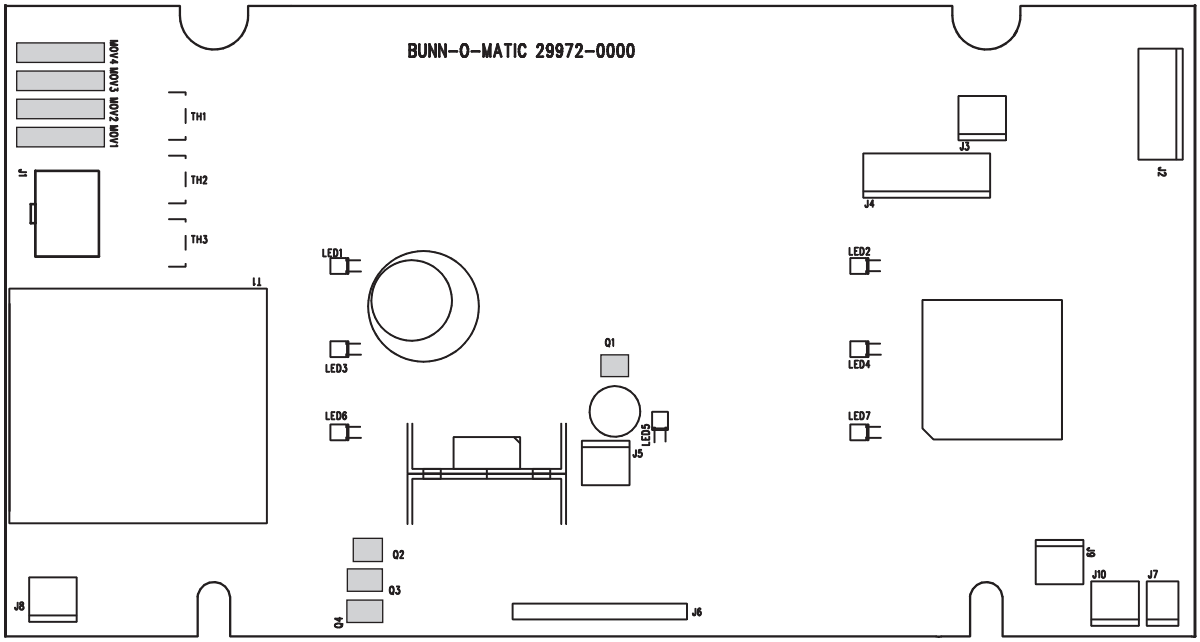
FIG 67 DISPLAY BOARD TERMINALS

TRIAC MAP for MHG



MOV1	controls	Transformer	@ J5-4,5,6
TH1 & MOV2	controls	Left Gate	@ J5-3
TH2 & MOV3	controls	Relay	@ J5-2
TH3 & MOV4	controls	Right Gate	@ J5-1

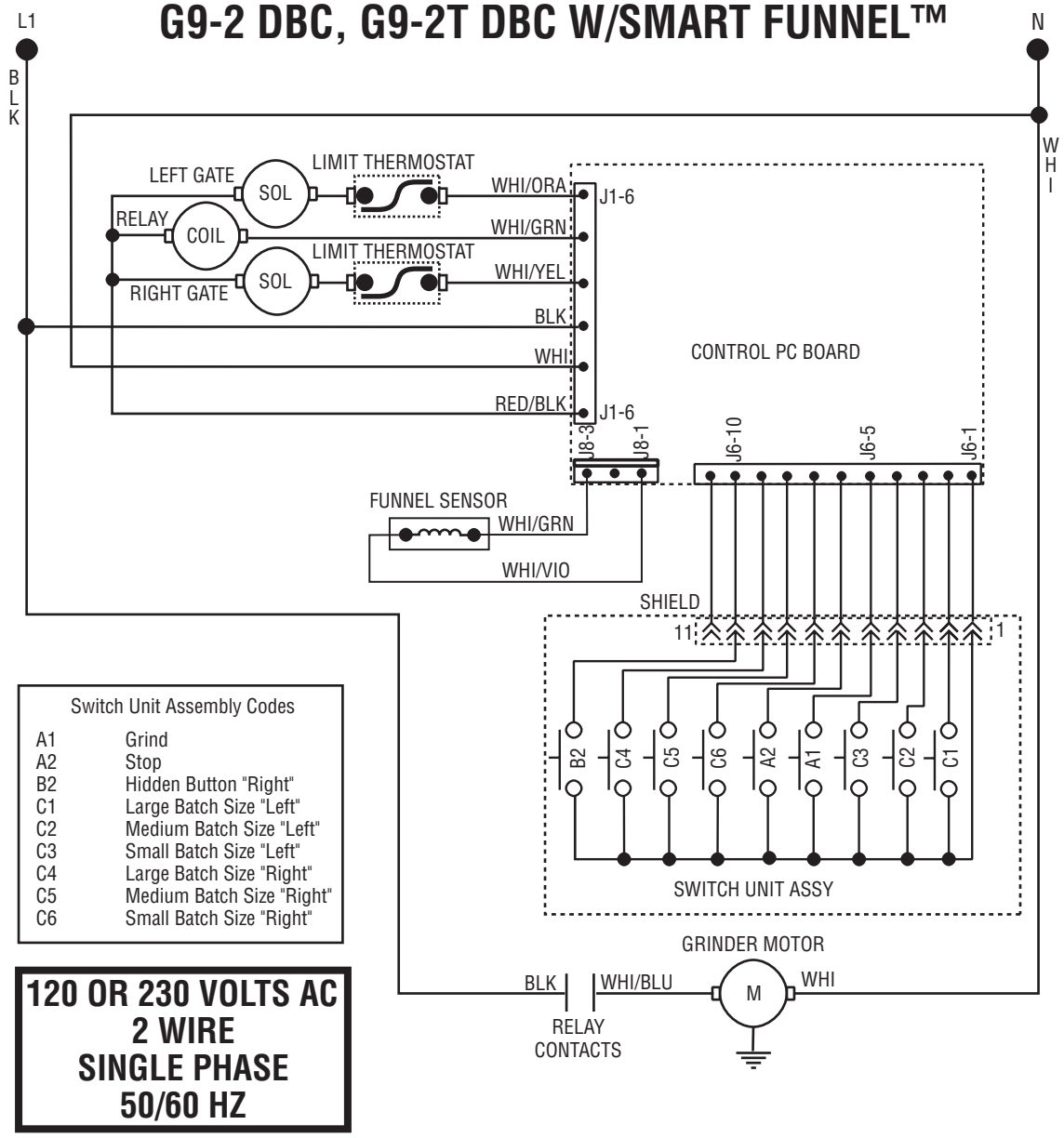
TRIAC MAP for FPG-2 DBC and G9-2 DBC



TH1 & MOV1	controls	Left Gate	@ J1-1
TH2 & MOV2	controls	Relay	@ J1-2
TH3 & MOV3	controls	Right Gate	@ J1-3
MOV4	controls	Transformer	@ J1-4,5,6

WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM
G9-2 DBC, G9-2T DBC W/SMART FUNNEL™

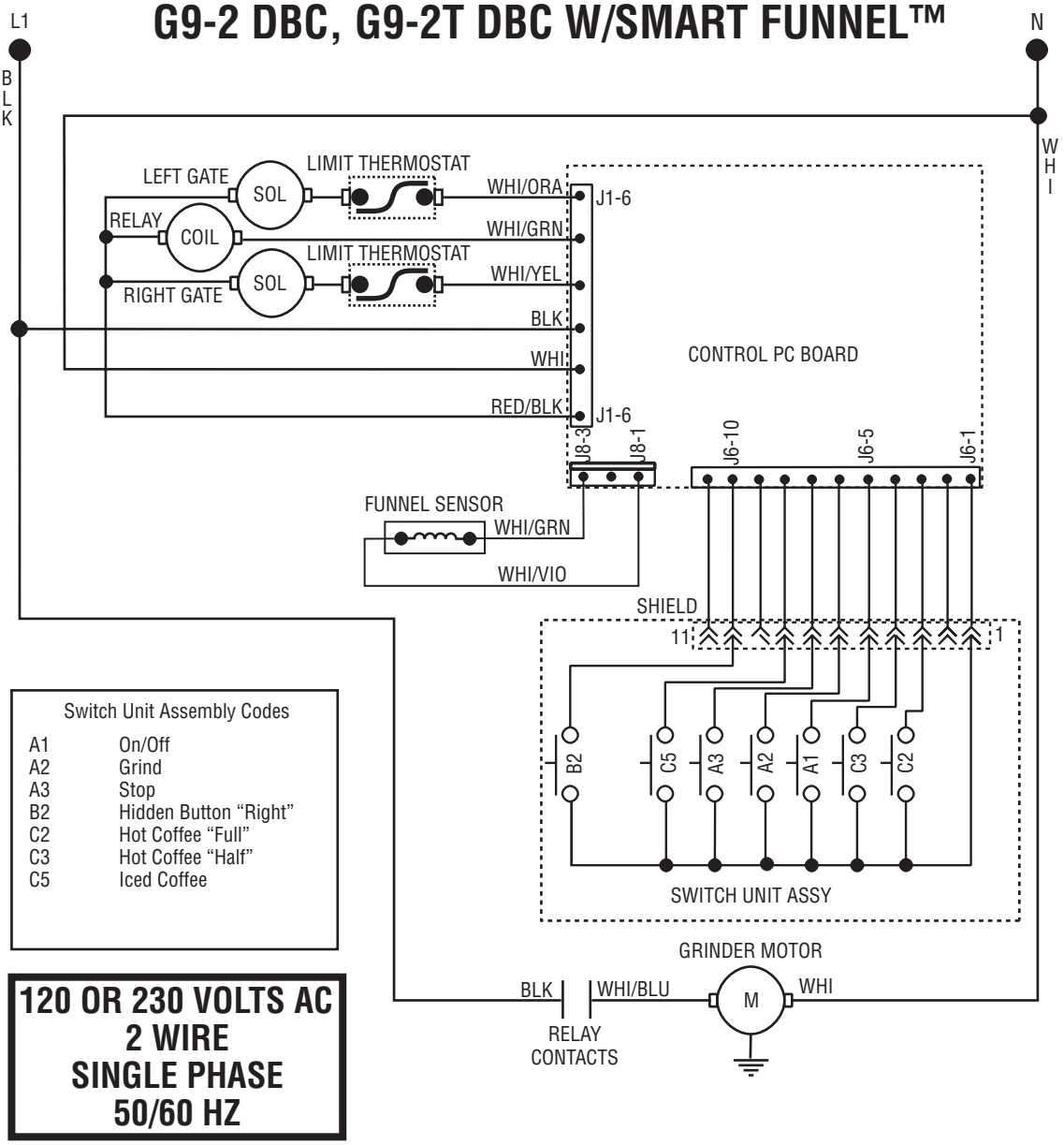


Switch Unit Assembly Codes	
A1	Grind
A2	Stop
B2	Hidden Button "Right"
C1	Large Batch Size "Left"
C2	Medium Batch Size "Left"
C3	Small Batch Size "Left"
C4	Large Batch Size "Right"
C5	Medium Batch Size "Right"
C6	Small Batch Size "Right"

120 OR 230 VOLTS AC
2 WIRE
SINGLE PHASE
50/60 HZ

WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM
G9-2 DBC, G9-2T DBC W/SMART FUNNEL™

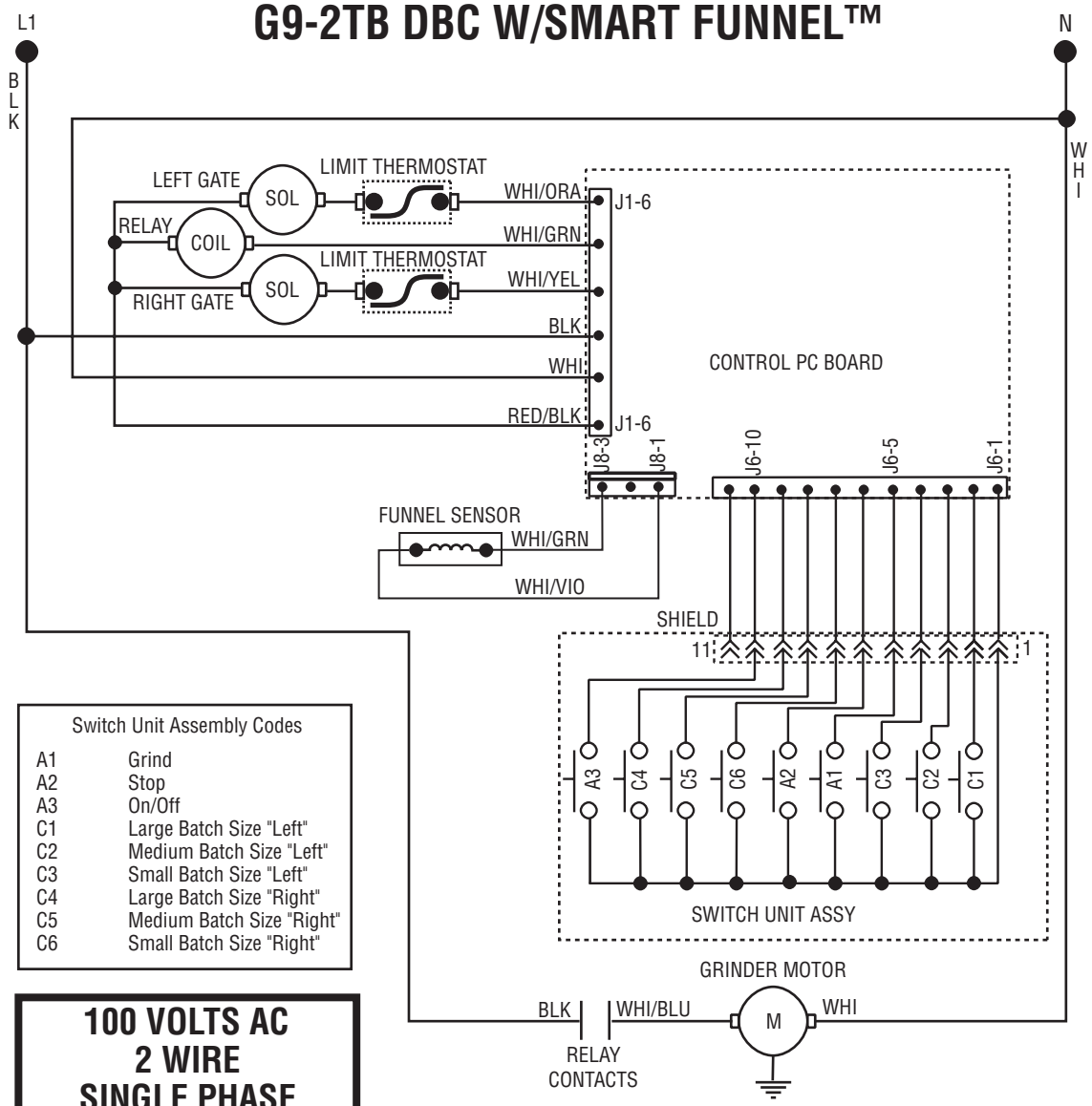


Switch Unit Assembly Codes	
A1	On/Off
A2	Grind
A3	Stop
B2	Hidden Button “Right”
C2	Hot Coffee “Full”
C3	Hot Coffee “Half”
C5	Iced Coffee

120 OR 230 VOLTS AC
2 WIRE
SINGLE PHASE
50/60 HZ

WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM
G9-2TB DBC W/SMART FUNNEL™

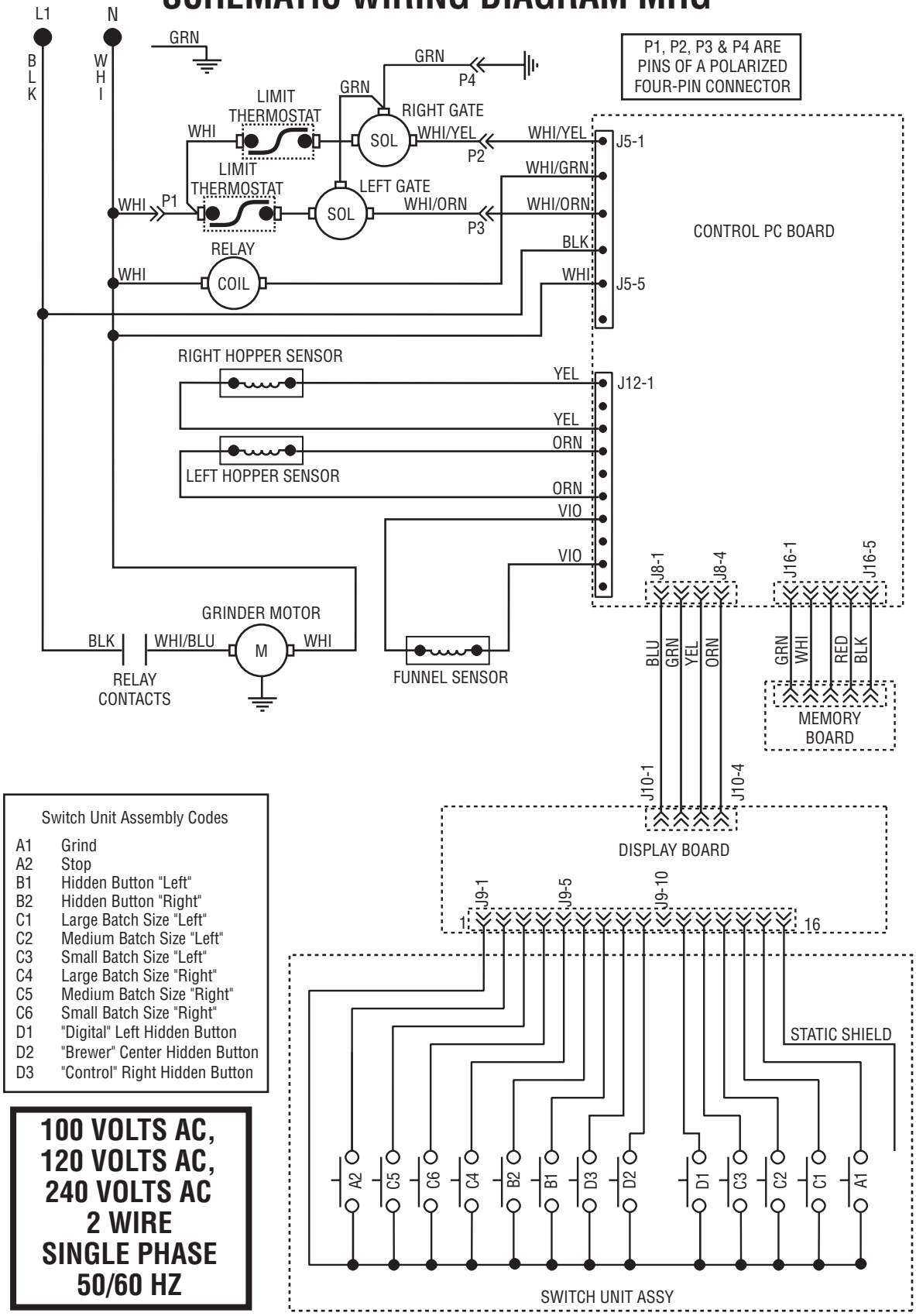


Switch Unit Assembly Codes	
A1	Grind
A2	Stop
A3	On/Off
C1	Large Batch Size "Left"
C2	Medium Batch Size "Left"
C3	Small Batch Size "Left"
C4	Large Batch Size "Right"
C5	Medium Batch Size "Right"
C6	Small Batch Size "Right"

100 VOLTS AC
2 WIRE
SINGLE PHASE
50 HZ

WIRING DIAGRAMS

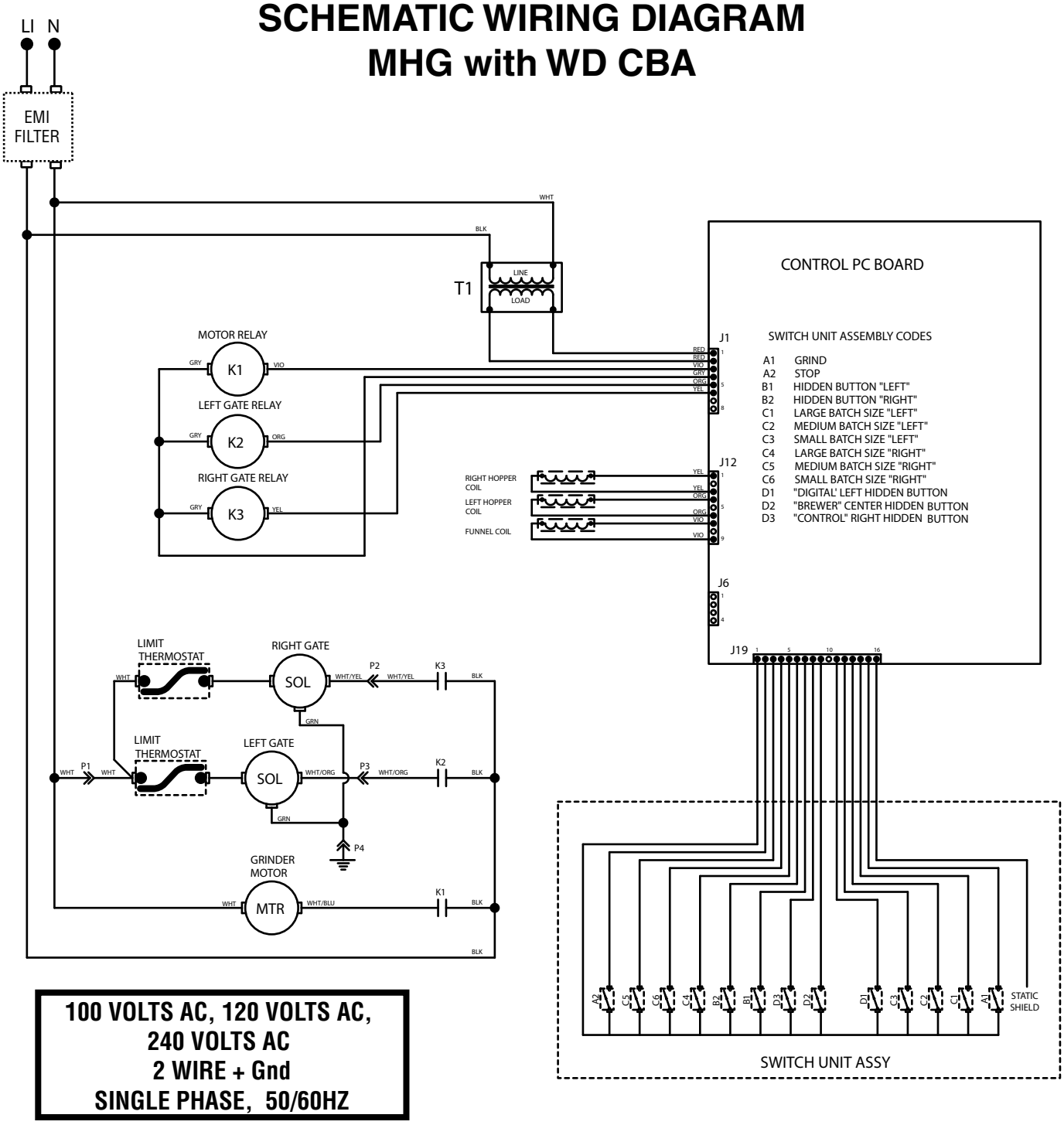
SCHEMATIC WIRING DIAGRAM MHG



Switch Unit Assembly Codes	
A1	Grind
A2	Stop
B1	Hidden Button "Left"
B2	Hidden Button "Right"
C1	Large Batch Size "Left"
C2	Medium Batch Size "Left"
C3	Small Batch Size "Left"
C4	Large Batch Size "Right"
C5	Medium Batch Size "Right"
C6	Small Batch Size "Right"
D1	"Digital" Left Hidden Button
D2	"Brewer" Center Hidden Button
D3	"Control" Right Hidden Button

100 VOLTS AC,
120 VOLTS AC,
240 VOLTS AC
2 WIRE
SINGLE PHASE
50/60 HZ

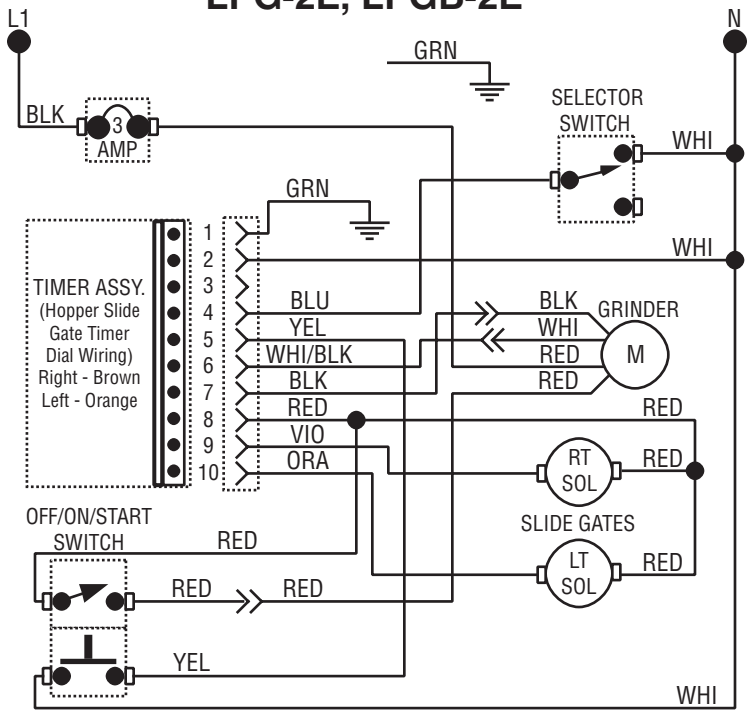
SCHEMATIC WIRING DIAGRAM
MHG with WD CBA



100 VOLTS AC, 120 VOLTS AC,
240 VOLTS AC
2 WIRE + Gnd
SINGLE PHASE, 50/60HZ

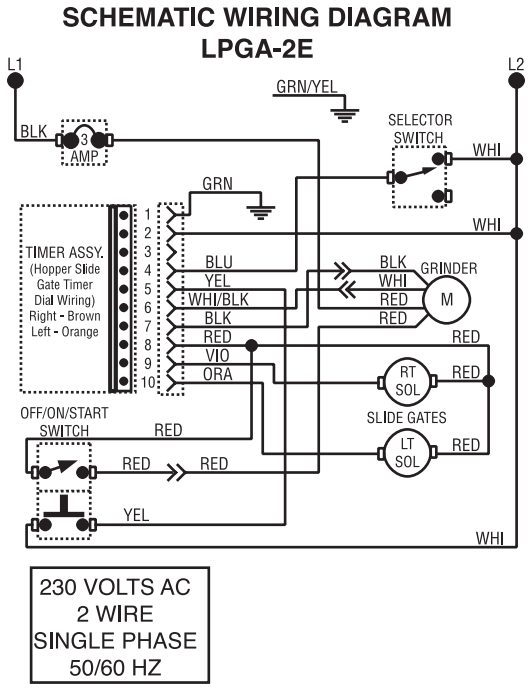
WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM
LPG-2E, LPGB-2E



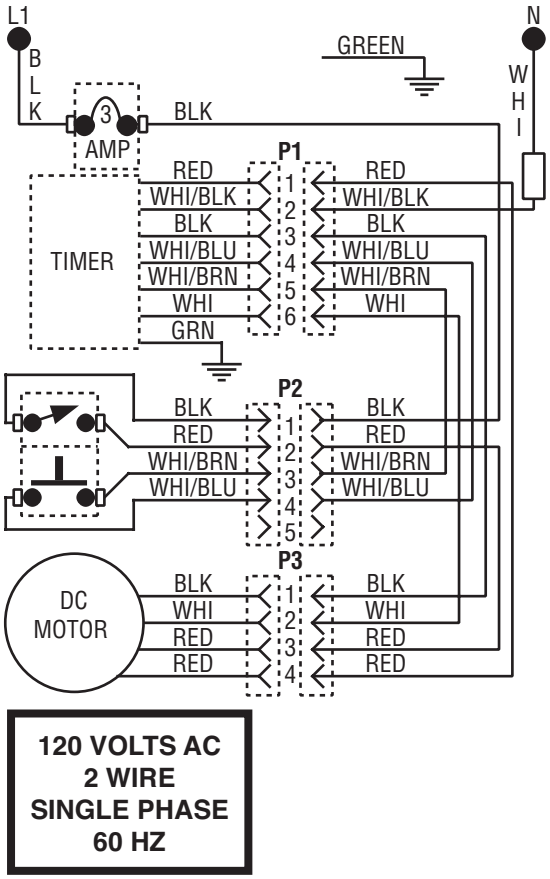
100 VOLTS AC
120 VOLTS AC
2 WIRE
SINGLE PHASE
60 HZ

WIRING DIAGRAMS



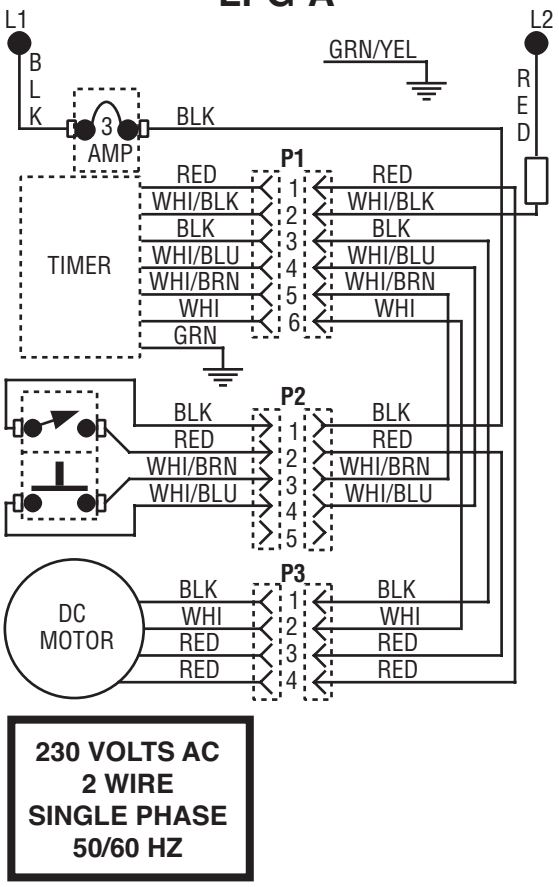
WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM
LPG



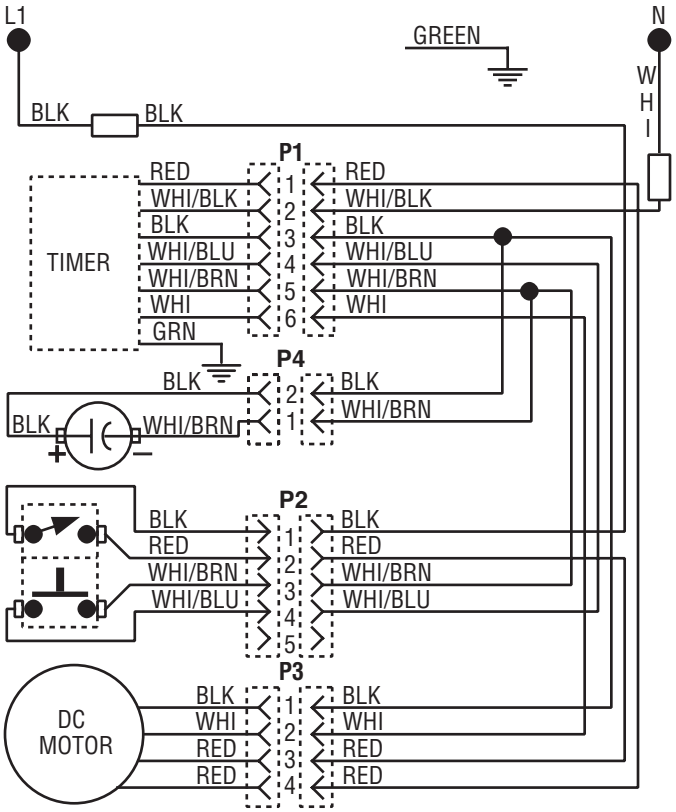
WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM
LPG-A



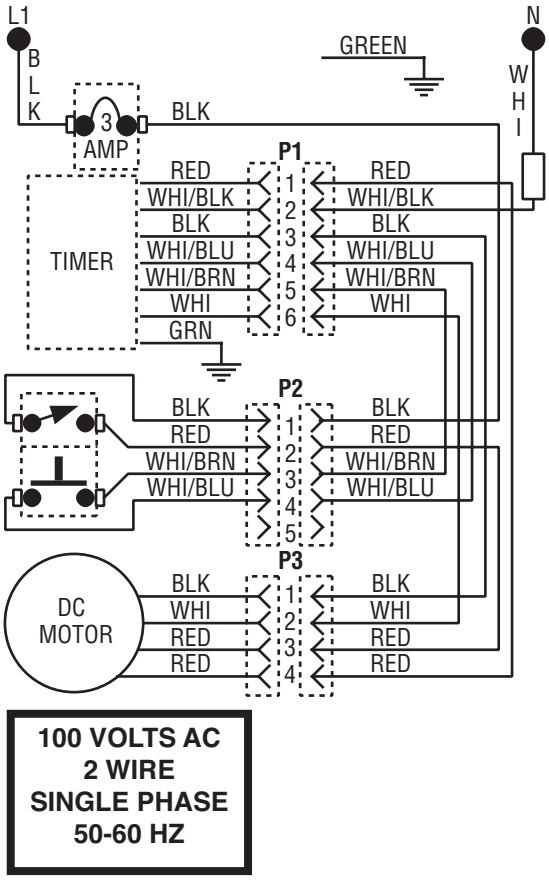
WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM
LPG W/Capacitor



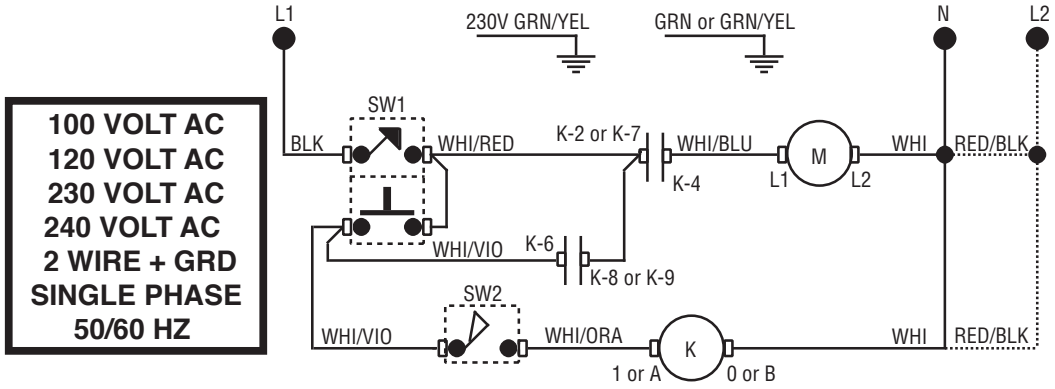
WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM
LPG-B

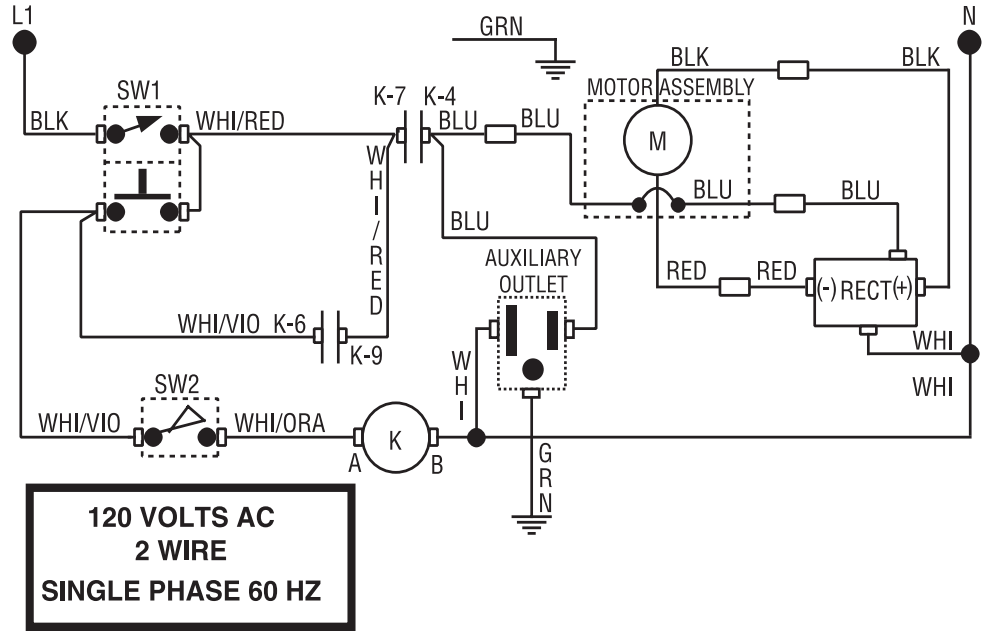


WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM G1, G2, G3 & G2 trifecta

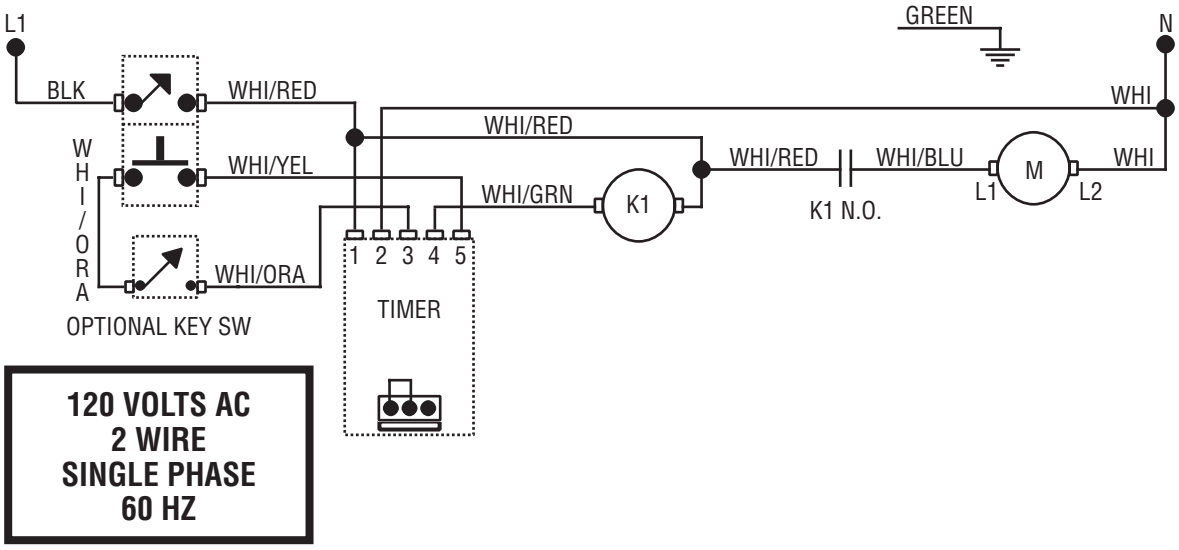


SCHEMATIC WIRING DIAGRAM G1-MD

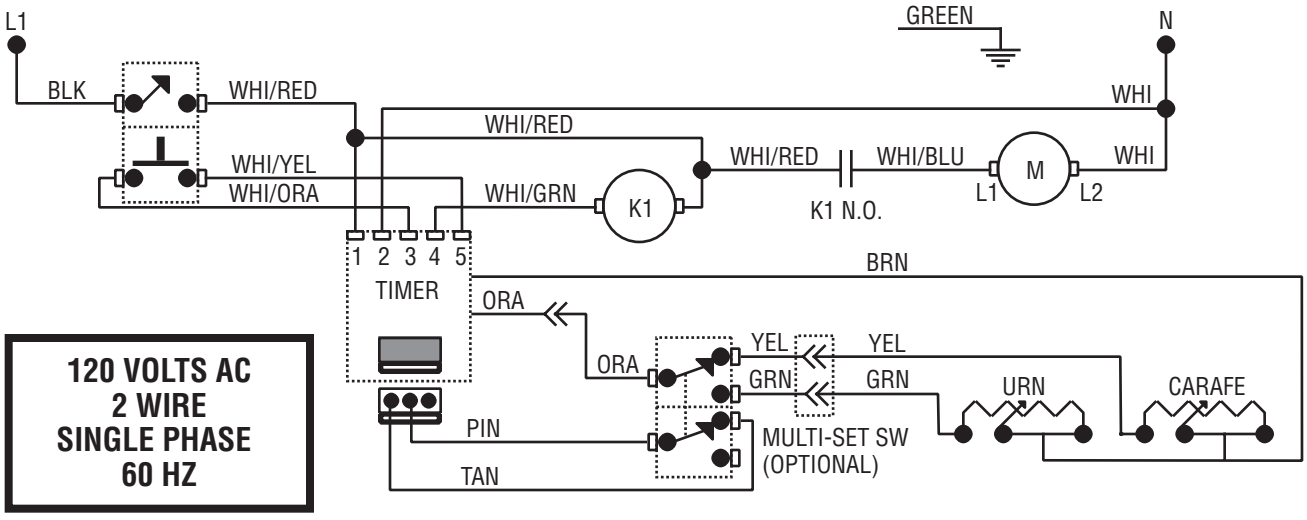


WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM G9

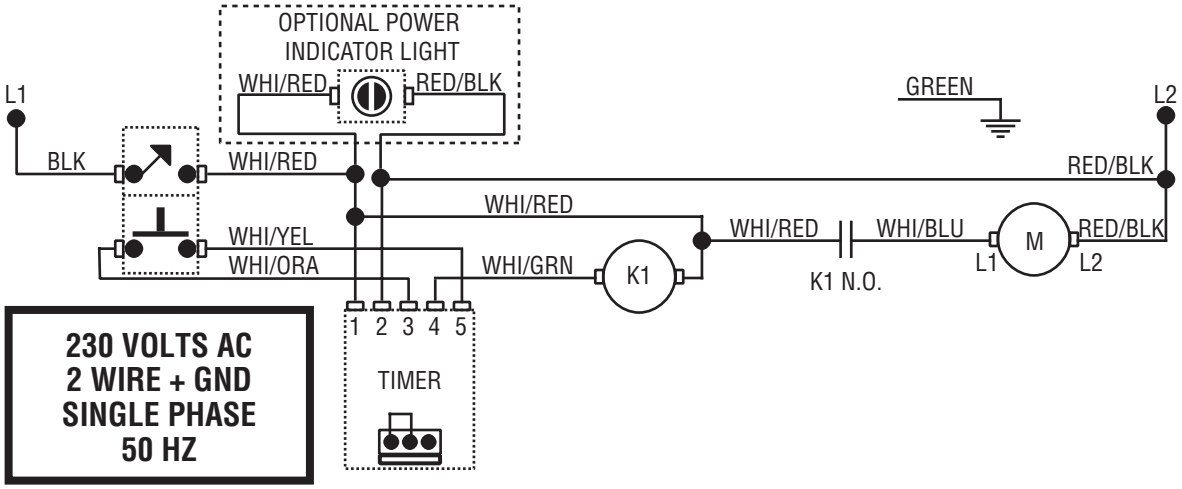


SCHEMATIC WIRING DIAGRAM G9-URN/CARAFE

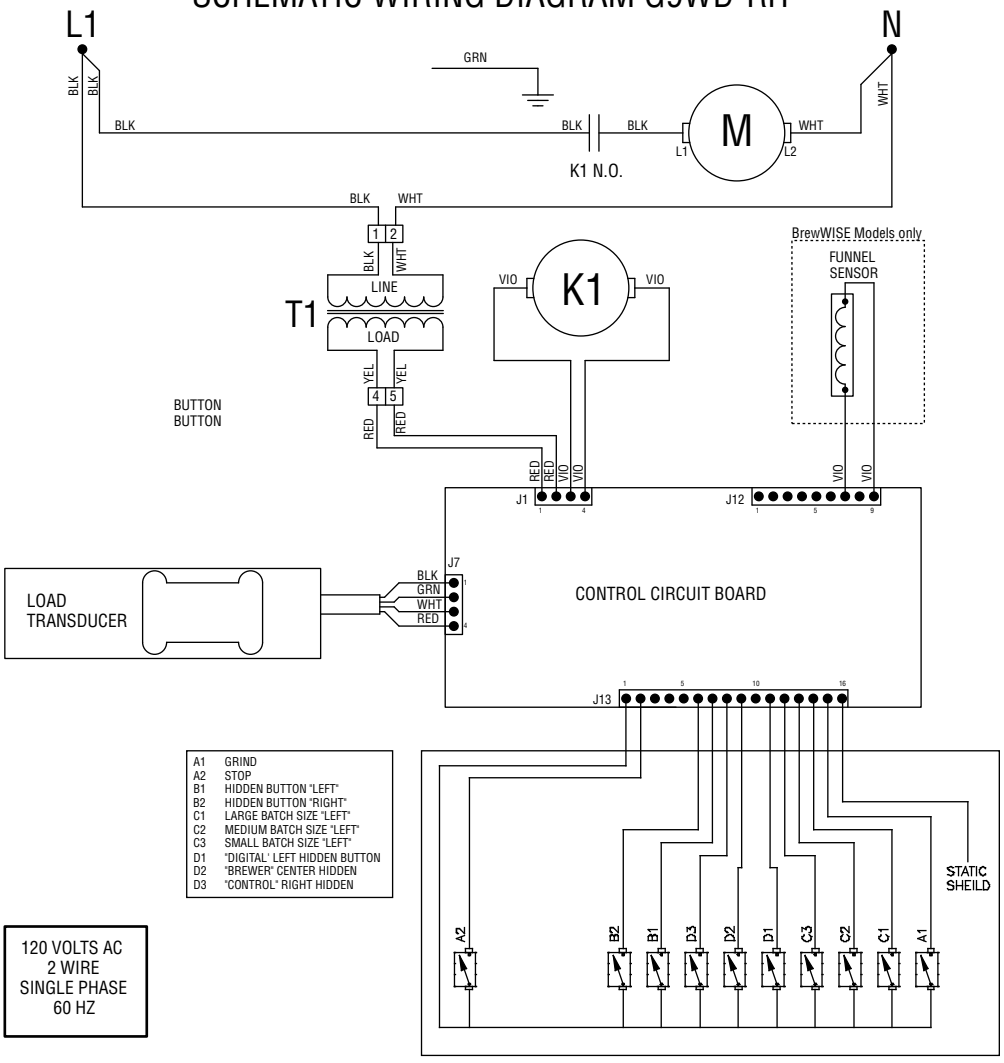


WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM G9A HD

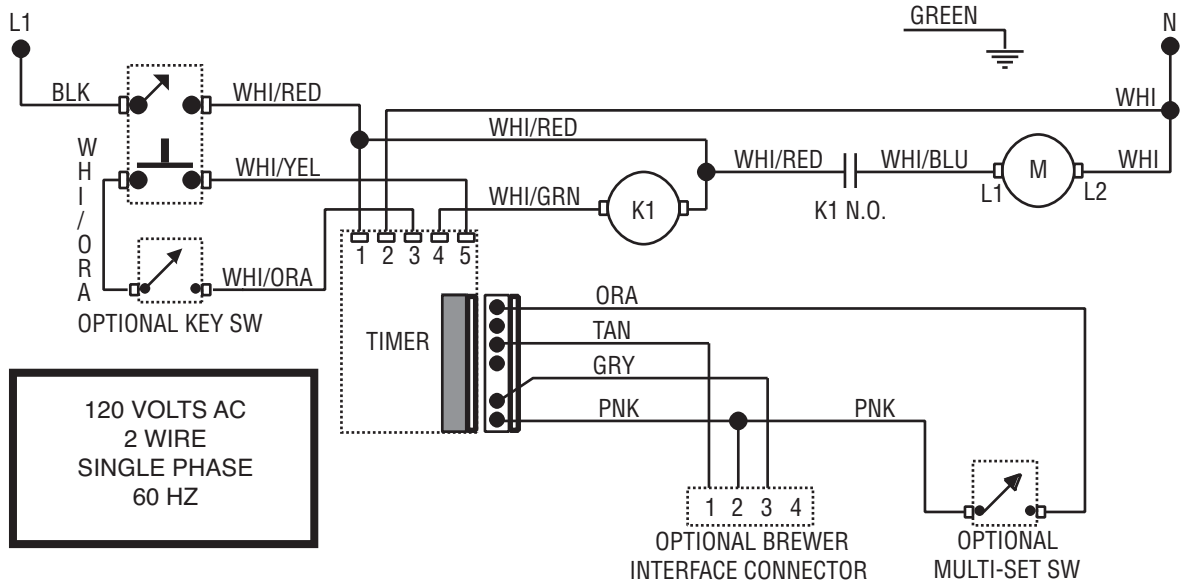


SCHEMATIC WIRING DIAGRAM G9WD-RH

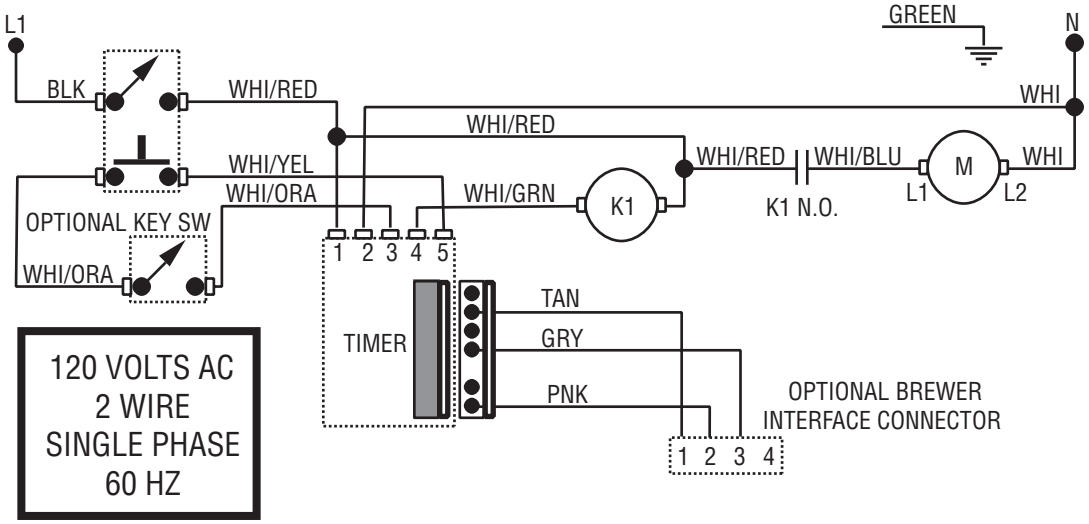


WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM G9

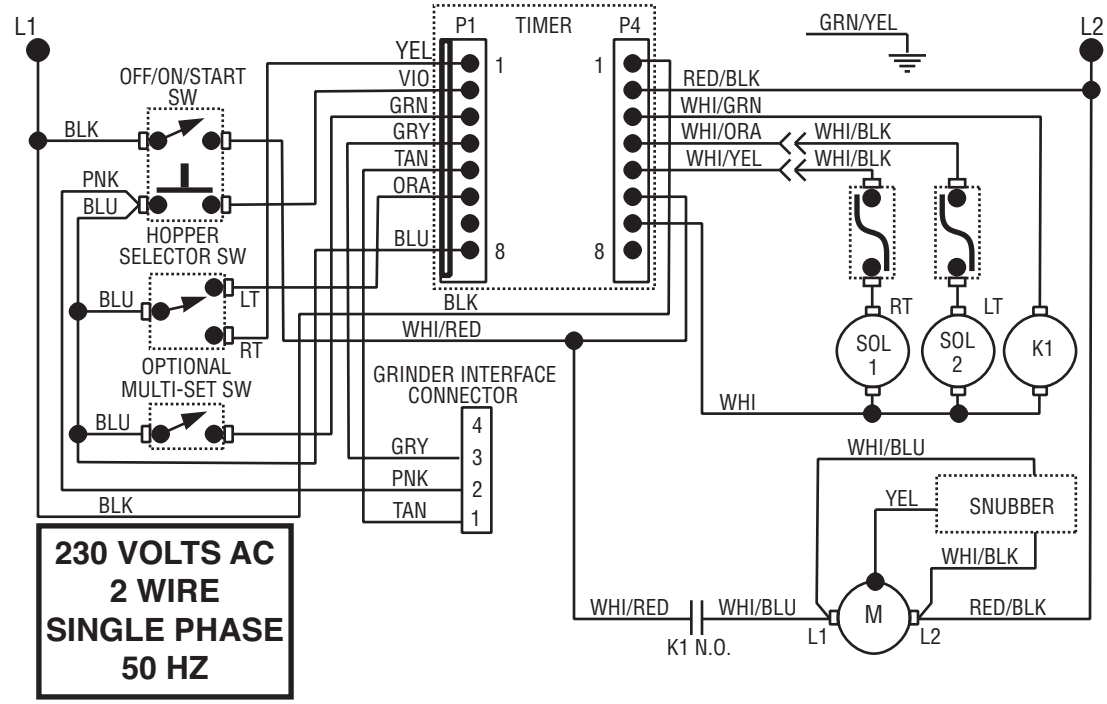


SCHEMATIC WIRING DIAGRAM G9

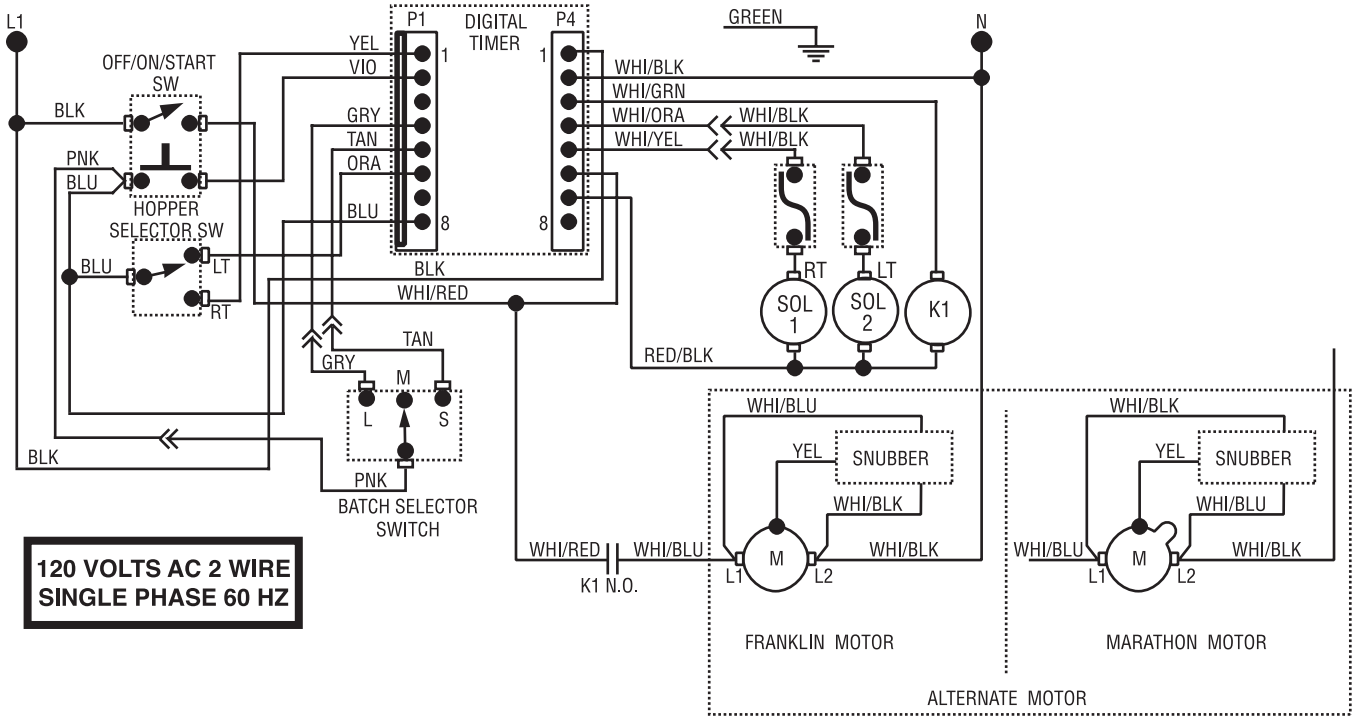


WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM G9-2A HD

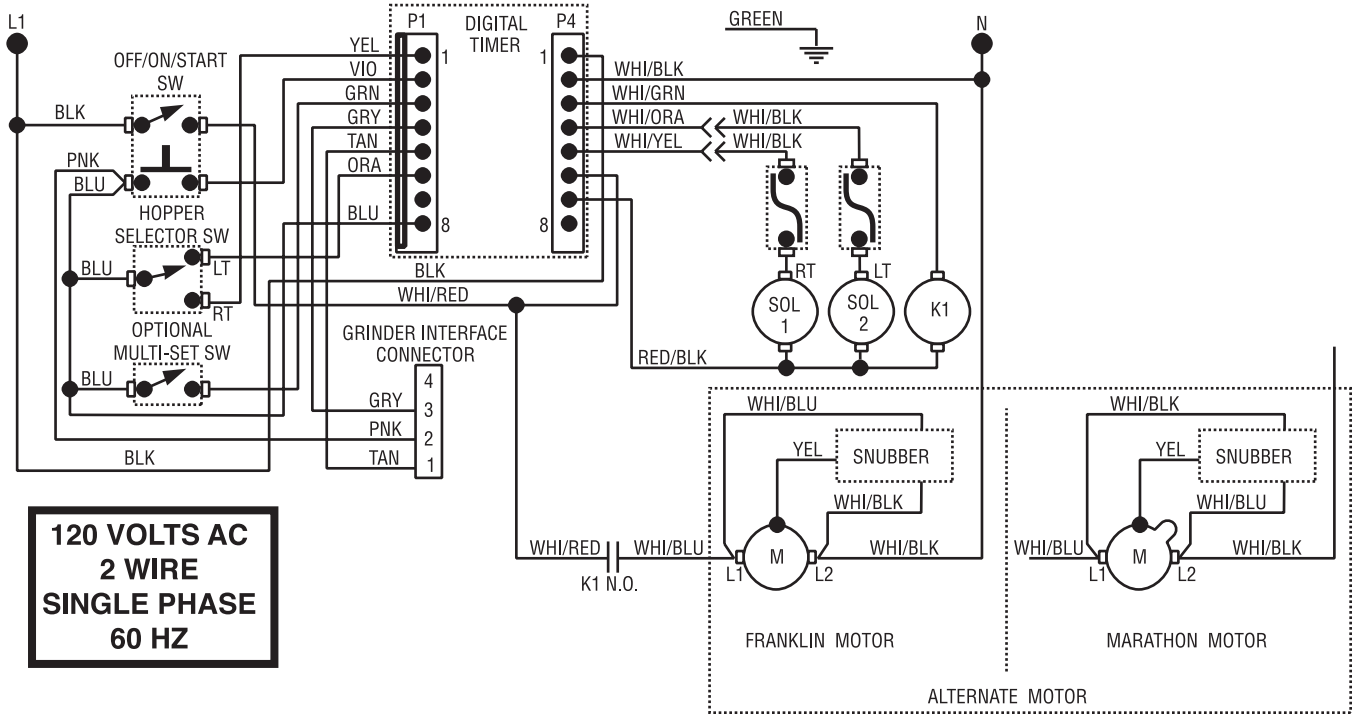


SCHEMATIC WIRING DIAGRAM G9-2 HD (DIGITAL TIMER W/BATCH SELECTOR)

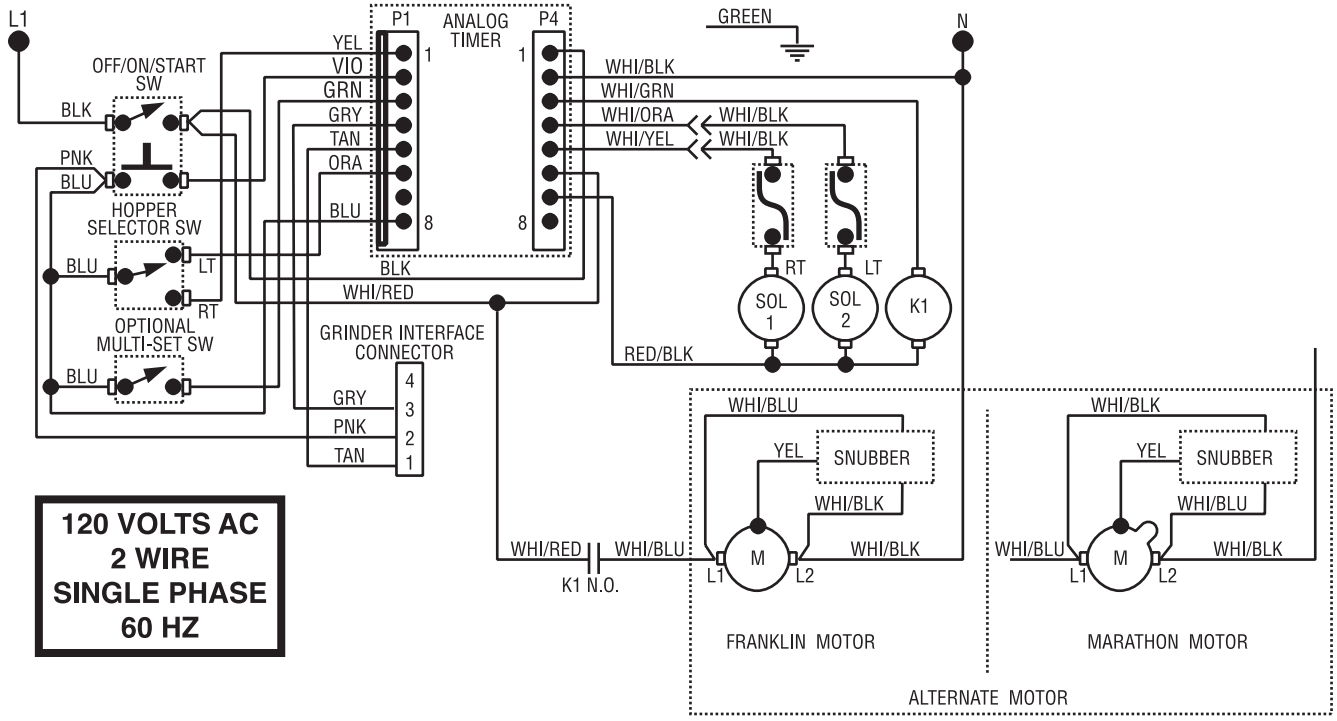


WIRING DIAGRAMS

SCHEMATIC WIRING DIAGRAM G9-2 HD (DIGITAL TIMER)

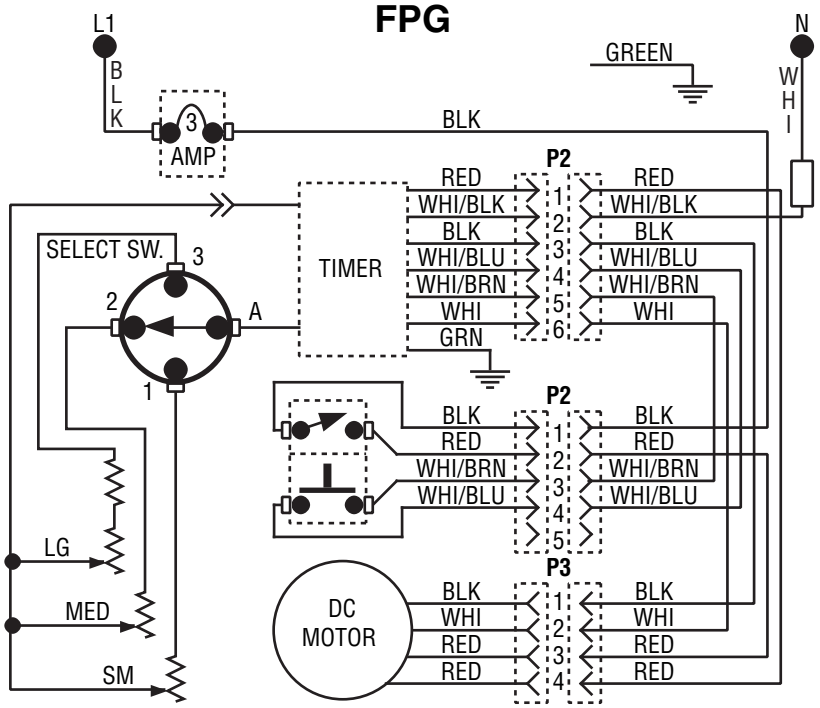


SCHEMATIC WIRING DIAGRAM G9-2 HD (ANALOG TIMER)



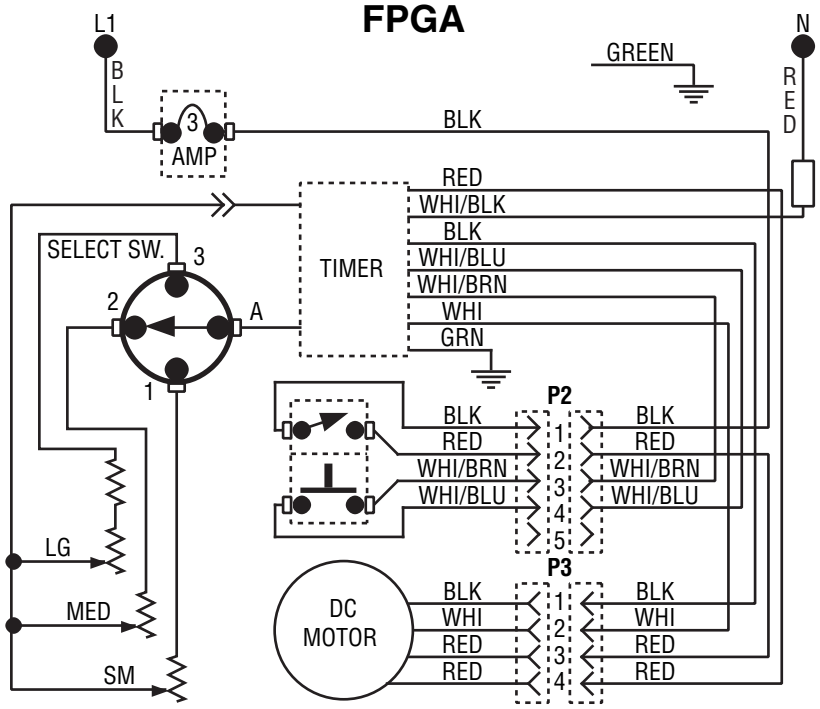
WIRING DIAGRAMS

FPG



120 VOLTS AC
2 WIRE
SINGLE PHASE
60 HZ

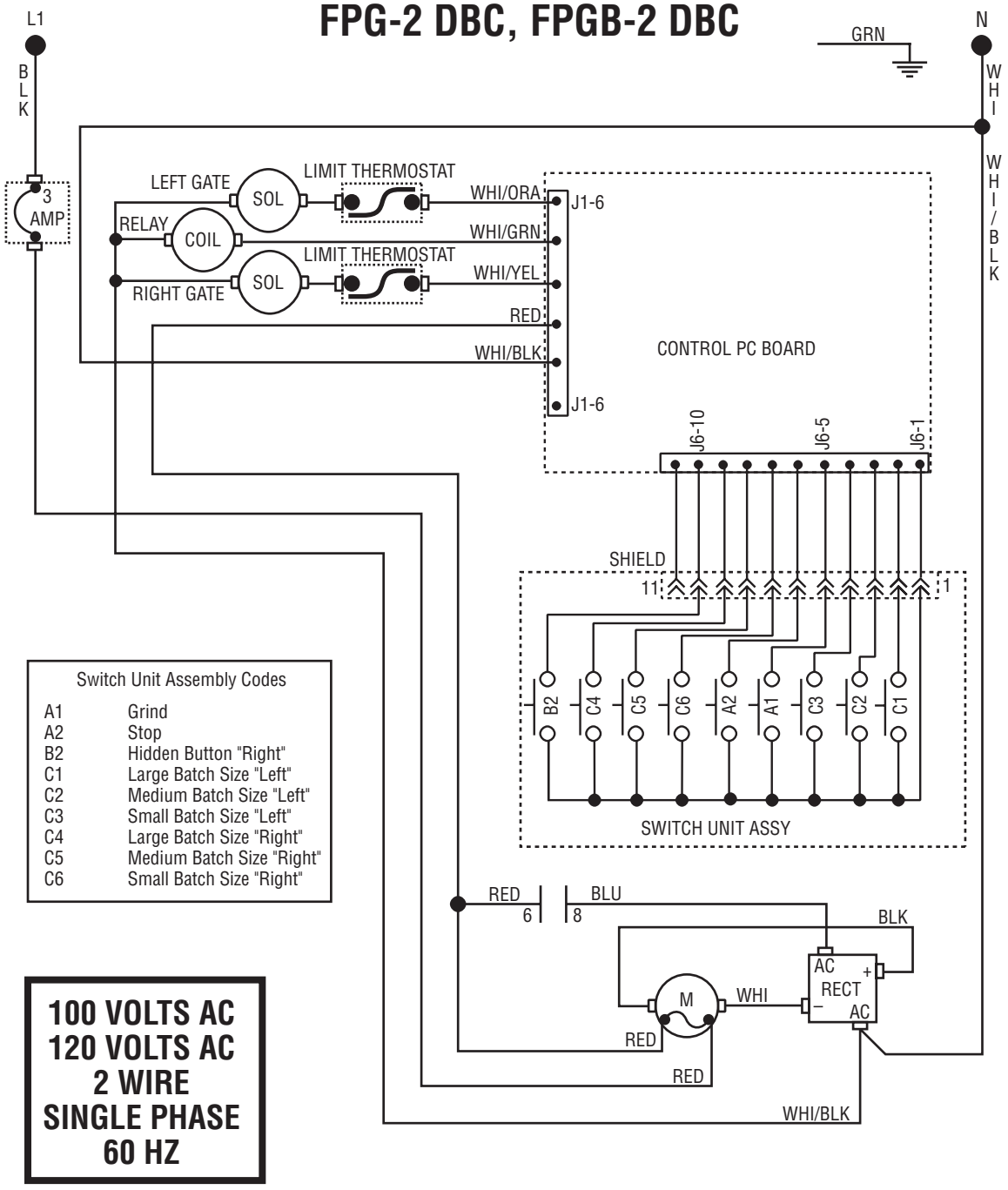
FPGA



230 VOLTS AC
2 WIRE
SINGLE PHASE
50/60 HZ

WIRING DIAGRAMS

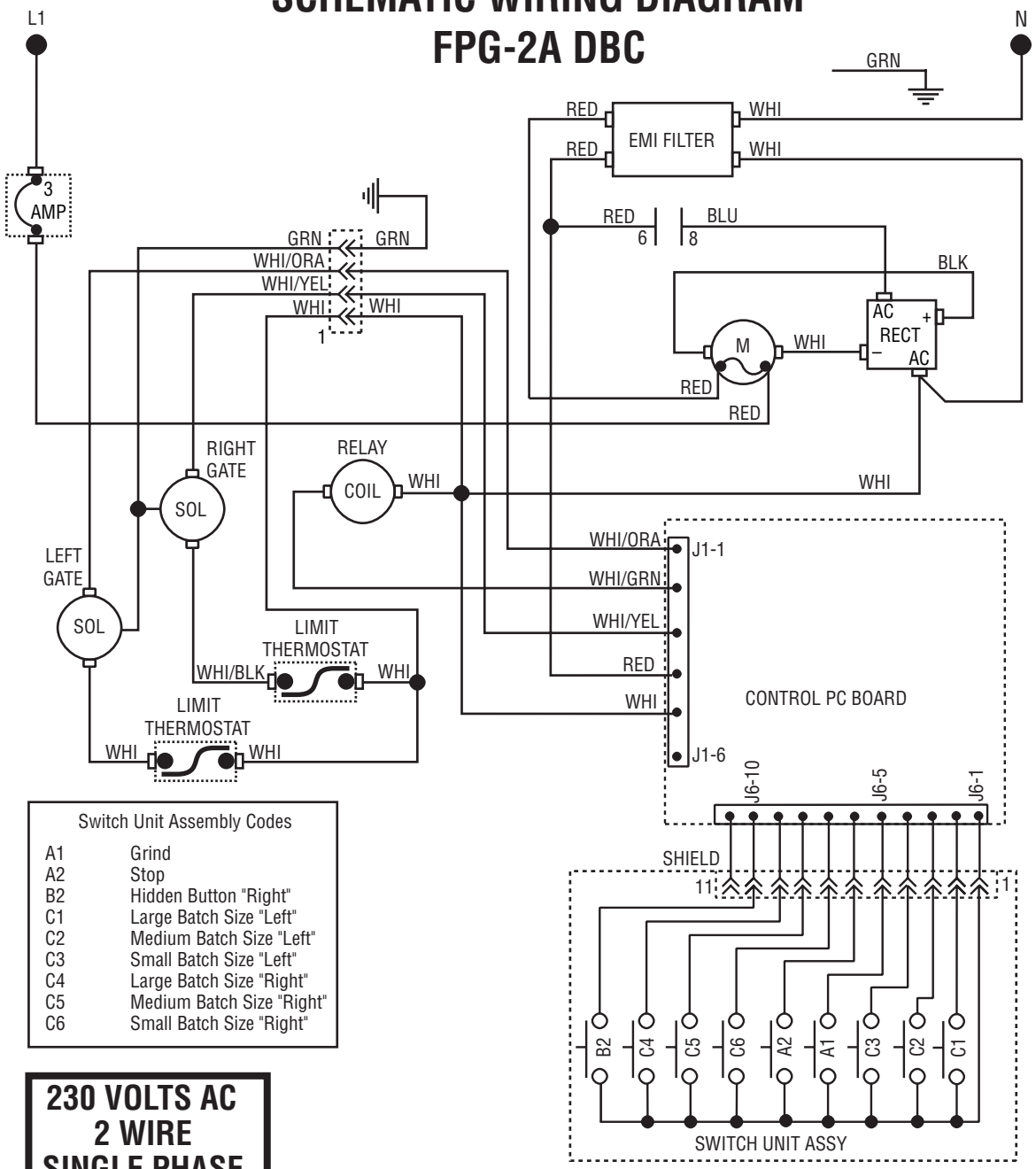
SCHEMATIC WIRING DIAGRAM
FPG-2 DBC, FPGB-2 DBC



Switch Unit Assembly Codes	
A1	Grind
A2	Stop
B2	Hidden Button "Right"
C1	Large Batch Size "Left"
C2	Medium Batch Size "Left"
C3	Small Batch Size "Left"
C4	Large Batch Size "Right"
C5	Medium Batch Size "Right"
C6	Small Batch Size "Right"

100 VOLTS AC
120 VOLTS AC
2 WIRE
SINGLE PHASE
60 HZ

SCHEMATIC WIRING DIAGRAM
FPG-2A DBC



Switch Unit Assembly Codes	
A1	Grind
A2	Stop
B2	Hidden Button "Right"
C1	Large Batch Size "Left"
C2	Medium Batch Size "Left"
C3	Small Batch Size "Left"
C4	Large Batch Size "Right"
C5	Medium Batch Size "Right"
C6	Small Batch Size "Right"

230 VOLTS AC
2 WIRE
SINGLE PHASE
50 HZ